Textile World
JUNE, 1958
McGRAW-HILL PUBLICATION

The only KNOW-HOW . . . KNOW-WHY Publication in Textiles

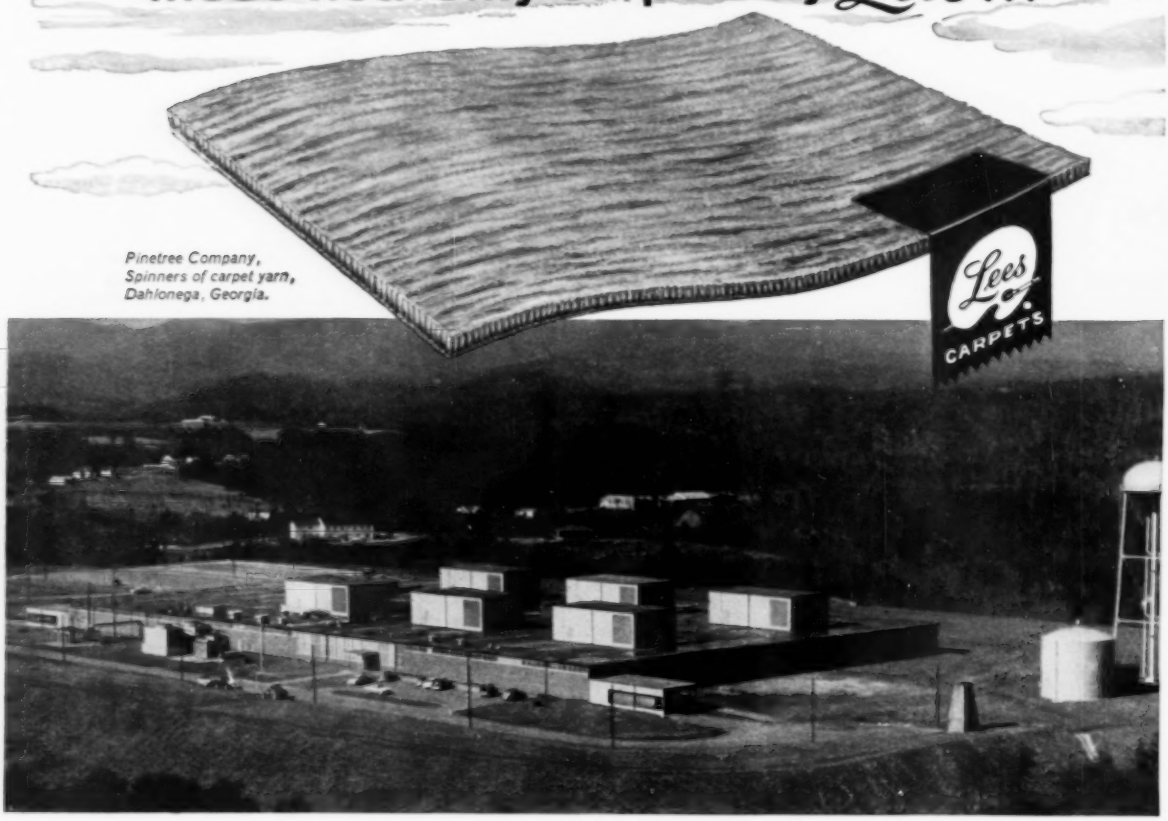
MILL MARGINS SIGNAL UPTURN OF BUSINESS

page 69

1958 REVISION–
COTTON-FIBER TABLE
page 47

NEW SECTION–
FIBERS · YARNS · FABRICS
page 123

those heavenly carpets by *Lees*...



Pinetree Company, Spinners of carpet yarn, Dahlonega, Georgia.

are manufactured today in the South

James Lees and Sons Company has moved its huge floorcovering production facilities to the South.

Four years ago, Lees began construction of Pinetree Company at Dahlonega, Ga., a carpet yarn spinning plant. The plant has since been doubled in size. The company built Rabun Gap Mills at Rabun Gap, Ga., to handle all tufting, dyeing and finishing, and a new wilton and velvet carpet plant was located at Robbinsville, N. C.

Lees is one of the many leaders in the textile industry which calls on Robert and Company Associates to design its plants and plant additions.

Because our staff is familiar with all branches of the textile industry, we are equipped to provide complete service, including site selection, preliminary sketches, cost estimates, building design, and the securing of bids from qualified contractors.

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

This Month in **TEXTILE WORLD**

June, 1958
Volume 108, No. 6

BUSINESS

Russia To Develop Giant Textile Industry . . . as part of an over-all drive to increase production of consumer goods . . . 3

TWUA Suggests Program To End Textile Slump. Six-point plan to help industry is proposed . . . 4

More Long-Staple Cotton Needed. Mills ask Tariff Commission for help in obtaining an adequate supply of fiber . . . 5

Congress May Swing Toward Faster Tax Write-Offs. Idea is gaining support in Washington . . . 5

South American Riots May Affect U. S. Mills. Economic troubles that provoked violence can be traced partly to U. S. trade. Revised policies on fiber and U. S. cloth exports would help some mills, hurt others . . . 6

Pickup in Sales—Seasonal or Upturn? Market observers ponder meaning of recent improvement in sales . . . 8

Britain To Limit Imports. First step taken to protect British mills from Asian competition. 9

Textile World's Index and Monthly Indicators . . . 10

MANAGEMENT

Another Step Forward (Editorial) . . . 45

Are You Preparing Now for the Next Boom? . . . 67

Mill Margins Signal an Upturn in Business. An indicator that has signaled or closely coincided with all six major business turning points in the last 10 years is now showing that mill production should turn up very soon . . . 69

When You Promote, Check Your Impressions. You can avoid some mistakes by carefully appraising why you think an employee will succeed in a bigger job . . . 107

PRODUCTION

. . . CARDING & SPINNING

Cotton-Fiber Table—1958 Revision . . . gives details of the raw-cotton properties and manufacturing performance of the 11 varieties of greatest commercial importance . . . 47

New Mill Combines Worsted and Cotton Machinery . . . to card and spin long-staple cotton, worsted, or man-made fiber . . . 78

. . . WEAVING

Look in the Quill Can To Check Loom Performance . . . 71

Large Warps and Bobbins Aid Canton-Flannel Weaving. Standard looms have been modified to decrease yarn replacement. Results in weaving are 93% efficiency and 3 to 4% seconds . . . 80

. . . TUFTING

Solution-Dyed Yarns Increase Tufted-Carpet Sales. Here's how one mill is using these yarns to make carpets of many colors and designs . . . 76

. . . KNITTING

Knitting Quality Incentives Pay Off in Lower Costs. Here's a report on what mills throughout the country are doing . . . 72

. . . ENGINEERING

Counterflow Regeneration Improves Deionizer Effluent. Here's how a modified counterflow system works to improve quality and cut costs . . . 82

Please turn the page

This Month in **TEXTILE WORLD** continued

CHEMICAL TREATMENT

Textile Chemicals 85
New Dyes & Chemicals 88
Measure Fabric Temperature With a Radiation Pyrometer. This unit measures cloth temperatures without contact, can handle a variety of fabrics, and is not affected by differences in fabric color 89
How Direct Colors Dye Cellulosic Fibers 96
PVC Used to Rebuild Peroxide-Bleaching Bowls. One company expects to realize longer life and lower maintenance costs by installing PVC liners 100

DEPARTMENTS

Book Reviews 144
Calendar 14
Editorial 45
Equipment and Supply News 127
Fibers, Yarns, Fabrics 123
Kinks and Short-Cuts 109
Mill Maintenance 170
New Dyes and Chemicals 88
New Literature 140
News About Men 180
News About Mills 13
News About Suppliers 174
Obituary 183
Pointers for Supervisors 107
Questions and Answers 121
Reader Service 193
Round Table 16
Textile Chemicals 85
Textile Business 3
Advertisers' Index 192

MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS AND AUDIT BUREAU OF CIRCULATIONS

A McGRAW-HILL PUBLICATION

TEXTILE WORLD

PRENTICE M. THOMAS ..... **Publisher and Editor**

GREENVILLE STAFF

Richard B. Pressley ..... *Senior Associate Editor*
James H. Blore ..... *Associate Editor*
William G. Ashmore ..... *Associate Editor*
Robert W. Pinault ..... *Assistant Editor*

NEW YORK STAFF

Louise E. Willie ..... *Managing Editor*
William A. B. Davidson ..... *Associate Editor*
Robert E. Walk ..... *Art Editor*
Gloria J. Meeks ..... *Production Editor*
Carol J. Wilhelm ..... *Copy Editor*

E. H. Helliwell ..... *Contributing Editor (New England)*
H. S. Knowlton ..... *Contributing Editor (Boston)*

John Wilhelm ..... *World News Editor*
George B. Bryant, Jr. ..... *Chief, Washington Bureau*
Dexter Keezer ..... *Economics Director*

CONSULTING EDITORS

C. Norris Rabold ..... *Chemical Treatment*
William A. Newell ..... *Textile Research*

BUSINESS DEPARTMENT

Walter C. McMickle ..... *Advertising Sales Manager*
Thomas Macaluso ..... *Business Manager*
Howard J. Bernard ..... *Research and Promotion*
John J. Nevins ..... *Production Manager*

DISTRICT OFFICES:

BOSTON 16, Ralph L. Chisholm, Dist. Mgr., 350 Park Square Building.
CHICAGO 11, Richard N. McKelvey, Dist. Mgr., 520 North Michigan Ave.
NEW YORK 36, Stokes T. Henry, Dist. Mgr., 500 Fifth Ave.
PHILADELPHIA 3, H. C. Harvey, Dist. Mgr., Six Penn Center Plaza.
CLEVELAND 15, Richard H. Burke, Dist. Mgr., 1510 Hanna Building.
ATLANTA 3, William O. Crank, Dist. Mgr., Rhodes-Haverty Building.
WASHINGTON 3, National Press Building.
OTHER OFFICES: Dallas 1; Detroit 26; Los Angeles 14; St. Louis 8; Pittsburgh 22; San Francisco 4; London E.C. 4; Paris 7; Bonn; Rio de Janeiro; Buenos Aires; Mexico City; Manila; Tokyo; Bombay; Melbourne E 4; Toronto 4; Frankfurt/Main.

© Copyright 1958 by McGraw-Hill Publishing Co., Inc. (All rights reserved)

TEXTILE WORLD Published monthly, with an additional issue in July, by McGraw-Hill Publishing Co., Inc., **EXECUTIVE, SUBSCRIPTION, AND ADVERTISING OFFICES:** 330 West 42nd Street, New York 36, N. Y. **EDITORIAL OFFICES:** 201 East Coffee Street, Greenville, S. C., and 330 West 42nd Street, New York 36, N. Y. Publication Office: 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or changes of address.

Donald C. McGraw, President; Henry G. Lord, Founder and Director; Joseph A. Gerardi, Executive Vice President; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice President, Publications Division; Ralph B. Smith, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator.

SUBSCRIPTIONS are solicited only from executives, engineers, chemists, and technicians in textile manufacturing and finishing plants. Position and company connection must be indicated on subscription order. Single copies $1.00. Subscription rates: United States and Possessions and Canada, $2.00 a year; all other countries, $15.00 a year. Second-class mail privileges authorized at Albany, N. Y. Printed in U.S.A. Annual index in January issue.

SUBSCRIPTIONS: Address correspondence and change of address to Fulfillment Manager, TEXTILE WORLD, 330 West 42nd Street, New York 36, N. Y. When address is changed, subscribers should give old as well as new address, including postal zone number. Enclose recent address label if possible. Allow one month for change to become effective.

Postmaster . . . Please send form 3579 to Textile World, 330 W. 42nd St., New York 36, N. Y.

TEXTILE BUSINESS

Textile World

J U N E • 1 9 5 8

THIS MONTH'S HIGHLIGHTS

Russian Industry To Expand

•

TWUA Proposes Aid for Industry

•

Long-Staple Cotton Needed

•

Faster Tax Write-Offs May Come

•

Politics Again Squeeze Mills

•

Sales Pick Up

•

Britain To Limit Imports

Russia To Develop A Giant Textile Industry

The Soviet Union is launching a massive program to expand its textile industry, particularly man-made fibers and fabrics.

Premier and Party Boss Nikita Khrushchev unveiled the program recently to the Central Committee of the Communist Party. It is part of an over-all drive to increase production of consumer goods, and particularly goods dependent upon the chemical industry. This drive, in time, could revolutionize the structure of the Soviet economy. Until now, the economy has been based almost exclusively on heavy industry.

In carrying out its expansion of consumer industries, the Soviet Union may become an important market for Western equipment for producing consumer goods of all kinds, as it was for heavy industrial equipment during the Thirties.

•

Khrushchev called for expanding the capacity of man-made fiber plants by 4.6 times between now and 1965. This expansion is part of a 100-billion ruble ($25-billion at the official rate of exchange) program to expand the chemical industry generally.

Stressing the importance of man-made fibers, Khrushchev said: "Of all the important problems in the development of the chemical industry, one of the most important is the question of the development of the output of artificial and synthetic fibers."

He went on to outline the program in these terms:

"The draft decision provides for a considerable increase in the production of fabrics involving use of artificial and synthetic fibers, as well as of other mass-consumption goods.

"On the basis of constant growth in the supply of natural raw materials from agriculture and of the development of a powerful synthetic-materials industry, the task of raising per-capita production of fabrics to 56 meters by 1965 is being set. **This means that in the eight years from 1958 to 1965, the increase in the production of all fabrics, including fabric for knitwear, will amount to 17 meters per inhabitant.** In the 44 years between 1913 and 1957, the increase in the production of all fabrics per inhabitant amounted to 20 meters.

•

"It is planned to increase production of woolen fabrics from 282-million meters in 1957 to 500-million meters in 1965. Let me note that the production of such fabrics in the U. S. A. amounted to 267-million meters in 1957.

"Production of silk fabrics is being increased considerably. Production of these fabrics must amount to 1,485,000,000 meters by 1965—almost 1.9 times the 1957 production. Production of staple cloth for suits is being increased 4.2 times.

"Production of cotton fabrics, using artificial and synthetic fibers, must increase sixfold during this period of time and must amount to 480-million meters. The volume of output of suitings will be increased tenfold compared to 1957.

"Production of outer-garment and underwear knitted fabric

Tire-Cord Production Off

Tire-cord and tire-fabric production were off in the first quarter, the Bureau of the Census reports.

Production of nylon cord and fabric dropped from 21,534,000 lbs. in the last quarter of 1957 to 16,003,000 lbs. in the first quarter of 1958—a drop of 5,531,000 lbs., or about 26%.

Compared to the first quarter of 1957, the drop was only 1,324,000 lbs., a little less than 8%.

Rayon tire cord and fabric declined from 67,572,000 lbs. in the last quarter of 1957 to 64,894,000 lbs. in the first quarter of 1958—a drop of 2,678,000, or less than 4%.

Compared to the first quarter of 1957, rayon dropped 26,588,000 lbs., about 29%.

Cotton tire-cord and tire-fabric production was down about 2% from the last quarter of 1957 to the first quarter of 1958. Production was 9,644,000 lbs. in the first three months of this year.

Looms in Place Dropped 2.6% in 1957

Looms in place in broad woven fabric mills dropped 2.6% in 1957, according to the Bureau of the Census.

Looms totaled 462,278 at the end of 1957, compared to 474,902 at the end of 1956—a drop of 12,624.

Cotton mills had 350,109 of the total looms, man-made-fiber and silk mills had 94,382, and woolen and worsted mills had 15,517.

Coated-Fabrics Sales Mixed

Sales expectations for the year in the coated-fabrics field now range from "slightly under" 1957 to "sharply above" 1957, spot checks with manufacturers in this field show.

Profits are generally expected to be less, although total profits at a somewhat lower percentage net of sales are hoped for by some manufacturers.

The big loss in this field is in sales to the automobile industry. Drops as high as 25% are reported by some suppliers.

will be greatly increased, artificial fibers being used. The total volume of production of all types of knitwear will reach 940-million pieces in 1965—double the 1957 quantity. Output of knitwear in which artificial fibers are used will be increased more than ninefold."

•

It's too early to guess precisely what Soviet orders for Western plants and equipment for the consumer-industry expansion program might add up to. The Russians undoubtedly will concentrate on buying prototype plants from the West for copying in the Soviet Union. Any such action would reduce the Western share in the total expansion program.

Even so, U. S. officials guess that total Soviet demand for Western equipment of all kinds might run into the billions of dollars over a period of years if Khrushchev follows through with his plans. They recall that in the Thirties the Russians bought as much as 40% of all U. S. exports of machinery and equipment during certain years when they were busy building up their heavy industry, and Washington speculates that they may follow a similar policy now for the expansion of consumer industries.

•

Britain and Germany are likely to get a larger share of whatever Soviet buying there is, at least at the beginning. They are more dependent upon exports and likely to push harder to get the orders. And until now, Moscow apparently has seen bigger political dividends in expanding trade with Western Europe than with the U. S., although this policy could change.

U. S. controls on exports to the Soviet Union on the whole are more strictly applied than Western European controls. The Commerce Dept. won't commit itself on whether or not it would grant export licenses for the plants the Soviets now are seeking. It's sure to look at any applications for export licenses closely in view of the ease with which many chemical plants can be adapted to military uses.

Free-world controls on East-West trade now are under review in Paris and are certain to be scaled down. But the U. S. won't necessarily relax U. S. controls to the same degree that the international controls are liberalized.

TWUA Suggests Program To End Textile Slump

The Textile Workers Union of America suggested this six-point program to help the textile industry at its biennial convention in Miami last month:

- A Congressional investigation of the industry's problems (a step already approved by the Senate and now before the House)
- Government purchase of surplus textiles for distribution to needy nations abroad
- Government distribution of clothing to the needy in America
- Re-establishment of textile stockpiles for our Armed Forces

• A Federal research program to stimulate the growth and progress of the industry
• A 35-hour week without loss of pay

The convention also considered a merger with the United Textile Workers, another union currently under probation in the AFL-CIO; but the board report said the possibility of such a merger is dim at this time.

More Long-Staple Cotton Needed

Mills running extra-long-staple cotton last month asked the Tariff Commission for help in obtaining an adequate supply of fiber.

The 1958-59 import quota of 90,000 bales of cotton of 1⅛-in. staple and longer was filled on Dec. 30, in the first five months of the quota period.

Percy S. Howe, president, American Thread Co., appealing for 30 mills, ACMI, and the National Cotton Council, pointed out to the commission that 49,500 bales of the quota were Mexican cotton, some of which was shorter than 1⅛ ins.

Mills need more cotton of 1⅜-in. staple and longer from Egypt, Peru, and the Sudan. Mr. Howe asked that the quota be controlled so that 90% of the import cotton be reserved for these lengths and that 15,000 to 20,000 bales of this 90% be reserved specifically for tanguis cotton from Peru.

Congress May Swing Toward Faster Tax Write-Offs

Faster tax write-off of business investment in new plant and equipment is becoming one of the more popular tax-cutting ideas as Congress begins to make up its mind about the whole antirecession problem.

The idea had considerable backing even before Sen. Homer Capehart (R.-Ind.) broke the ice with his bill to give larger tax deductions to companies that invest in new capital goods over an 18-month period beginning last January 1.

Actually, there's more support in Congress and the Administration for a permanent revision of tax write-offs than for a one-shot revision as an antirecession move.

•

Most of the proposals advanced so far would permit taxpayers to reduce the tax life of capital goods as specified in Bulletin F of the Internal Revenue Service.

Capehart's bill, for example, would permit a company to cut in half the tax life of any equipment the tax life of which is specified

Union Members Want Greater Fringe Benefits

Fringe benefits now interest a larger majority of union members than pay increases, a survey by Opinion Research Corp. shows.

Interviews with 796 employees throughout the country showed that:

• 46% want increased unemployment benefits
• 40% want increased hospitalization and insurance benefits
• 36% want a guaranteed annual wage
• 35% want a shorter work week with no loss in pay
• 33% want larger company pensions
• 27% want higher wages
• 20% want more vacation days with pay
• 18% want a profit-sharing plan

The fringe benefits incorporate the patterns of settlements last year in textile mills dealing with TWUA. The high preference for increased unemployment benefits this year was influenced by heavy unemployment, particularly in metalworking, at the time the survey was made; but it probably would hold its top spot in a survey limited entirely to textile-industry union members.

In explaining the low preference for pay increases, the survey revealed that most workers think that no real benefit would come from a pay increase; the increase would only result in higher prices.

1957 Cotton Crop Down 17%

The 1957 cotton crop was down 2,270,830 bales from the 1956 crop, according to the Bureau of the Census.

Ginning of 1957-58 cotton totaled 10,880,378 bales, compared with 13,151,208 bales from the 1956-57 crop. That represents a 17.2% decrease.

Wool-Fabric Imports Near Cut-Off Point

This year's cut-off date for imported wool fabrics under the Geneva Reservation is likely to hit in late June or July.

In the first four months of this year, slightly over 10-million lbs. of woven wool fabrics had entered. At this rate, 2.5-million lbs. a month, the 14.2-million-lb. cut-off point will be reached in June, perhaps a month earlier than last year's July 25 cut-off date.

Department-Store Sales Lag 3% Below 1957

Department-store sales for the year (Jan. 1-May 10) are down 3% from the same period last year, according to Federal Reserve Board figures.

For the four weeks prior to May 10, sales were 4% below the same period last year. **Most observers attribute a great deal of the slack in sales to rainy, chilly weather delaying spring and summer buying.**

•

Hardest hit of the 12 districts reported on by the Federal Reserve Board are the Chicago and St. Louis areas, each down 6%, and the Cleveland and Richmond areas, each down 5%.

The only area where sales are not down is the New York area, where sales are running level with last year.

The other seven areas stack up as follows:

- Kansas City, down 1%
- Minneapolis and San Francisco, down 2%
- Boston, Philadelphia, Atlanta, and Dallas down 3%, the national average.

Courtaulds (Canada) Ups Viscose Price

Courtaulds (Canada) Ltd. has increased the price of Type 101 Tenasco (viscose) industrial yarn 1¢ per lb. The price schedule now is:

1,100-den./490 filament—65¢
1650/720—60¢
2200/960—60¢

Textile Employment Drops

The textile industry dropped almost 90,000 workers from its rolls during April, the Bureau of Labor Statistics reported. This was 11,400 more than in March.

Employment in the mill-products industry dropped to 831,600 from last year's April figure of 931,400.

Hourly wages remained the same at an average $1.50, but a shorter work week brought average earnings from $56.24 in March to $54.60 in April.

by Bulletin F as 15 years or less. On goods with more than 15 years' tax life, the bill would permit a company to cut the first 15 years in half and the remainder by two-thirds.

A Republican on the House Ways and Means Committee, Howard Baker (R.-Tenn.), has introduced a bill for a straight 50% reduction of tax life of everything in Bulletin F.

•

Practically all businessmen and many lawmakers are strong for the depreciation idea, although some legislators and administration officials are against it. Some view it is a tax break for business and say that faster write-offs can be approved only as a part of a revision package that includes something for individuals. Treasury officials are reluctant to lower tax life much because of the loss of revenue involved, at least at the outset.

Estimates on the amount of savings to companies under the faster write-offs suggested are admittedly only stabs at a figure. Capehart estimated, for instance, that his idea might result in savings of $600-million to $1-billion a year.

South American Riots May Affect U.S. Mills

The U. S. textile industry is almost certain to feel new effects of inter-American politics.

The violence that greeted Vice-President Nixon in South America last month is generally recognized as having its roots in unsatisfactory economic conditions. In a large measure, these poor conditions can be traced to U. S. trade. To some South American countries, and to Mexico, trade with the U. S. means textile fibers to a considerable extent.

Nixon ran into both political and economic trouble early in his trip. In Montevideo, Uruguay, in the last days of April a handful of university students booed him, chanting, "Out with Nixon," and throwing leaflets at him accusing him as a representative of "North American imperialism."

More important, a 15-man delegation of American businessmen in Uruguay urged Nixon to back moves in Washington to revive Uruguay's wool sales to the U. S. They made it clear that Uruguay lives largely by exports of wool fiber and that U. S. trade bars are leaving the field to Russia.

•

U. S.-Uruguay trade is suffering on two counts: U. S. imports are priced too high for dollar-short Uruguay; and U. S. duties on Uruguayan exports, particularly wool, are too stiff.

Both Uruguay and Argentina began to ship increasing amounts of wool top to the U. S. in 1950. The governments, both anxious for dollars, subsidized the tops exports. Tops sold in Boston at 30¢ a lb. less than tops made by U. S. wool-combing mills.

Under the 1930 Tariff Act, U. S. countervailing duties have to be imposed in cases where a foreign government subsidizes exports. In 1950, the duties were changed to accommodate

revised rates of exchange, but the subsidy-offsetting duties remained.

Uruguay and other South American countries blame much of their economic ills on these countervailing duties.

•

U. S. policy on cotton has also drawn the ire of some Latin American countries.

The abortive cut-price move by the U. S. to unload the huge cotton carryover that had accumulated as a result of cotton price supports hit directly at Mexico, Peru, and Brazil.

Cotton production had been steadily increasing in these countries for years. While the price-support plan in the U. S. was piling up millions of bales of cotton in U. S. government warehouses, these Latin American countries were enjoying growing world markets.

Then the U. S. began its holocaust of price-cutting and dumping. The economies of these "good neighbors" were jolted.

When Nixon reached Lima, Peru, hard hit by the U. S. cotton-dumping policy, bitterness began to boil over into political demonstrations.

•

Canada is about as bitter toward the U. S. as the countries to the South.

For more than a year the Conservative party, in power, has been working to free Canada of some of its U. S. domination.

Last month, on the heels of the Nixon debacle in South America, Livingston T. Merchant, U. S. Ambassador to Canada, warned that the U. S. political and economic fences had better be mended in Canada also. And President Eisenhower has announced that he will make an "informal" visit to Canada in July.

One of Canada's chief gripes at the U. S. is U. S. textile mills "dumping" goods on the Canadian market.

Last year when the Conservative party took over the government from the Liberals, who had been in power for several years, it publicly announced that one of its prime targets for import reduction would be U. S. textiles.

The Canadian point of view was brought into sharp focus last month at the Canadian Textile Conference in Montreal. H. V. Lush, president of the Canadian Manufacturers Assn., urged a "Buy Canadian" and "Made-in-Canada" campaign to help Canadian mills.

For several years, Canadian mills have been getting less and less of their own textile market and U. S. mills have been getting more and more. Last year, Mr. Lush pointed out, the volume of U. S. goods moving into Canada was seven times greater than the 1939 volume.

The purpose of the "Buy Canadian" and "Made-in-Canada" campaign is to alert Canadian consumers to the threat of imports to Canada's own textile industry.

The U. S. government cannot afford to let these pots of bitterness go on boiling north and south of us.

Important concessions to relieve bad economic situations will have to be made, and they are certain to have sharp effects on the U. S. textile industry.

On the fiber side, the effects are likely to be good. Any move

U. M. & M. Closes Two Mills

United Merchants & Manufacturers has decided to close two woolen-goods mills in its A. D. Juilliard & Co. division: Virginia Woolen Co., Winchester, Va., a weaving mill, and Varel Mills, Martinsburg, W. Va., a finishing plant.

The two plants employ 389 people and have an annual payroll of about $1-million.

Z. B. Lane, Jr., division manager, said that the mills are being closed for an indefinite period because of poor business conditions in the woolen branch of the industry.

Deering, Milliken Wins Suit

Deering, Milliken & Co. won damages and a desist order last month against Gilbert Textile Co., New York, for misuse of Milium labels.

In May, 1956, Deering, Milliken charged Gilbert with using Milium labels on fabrics that were not Milium, a Deering, Milliken tradename.

Triple damages and attorney fees were awarded, and Gilbert was ordered to refrain from the mislabeling.

Bad Weather Slows Sales of Domestics

Department-store sales of domestics followed a mixed course last month, with bad weather one of the strongest influences.

• **Some styles of blankets moved well,** others a little slow. Bargains were easy to find in stores and from mills. The 80x90 size in blends of rayon-nylon-Acrilan and rayon-nylon-Orlon were good movers. Some buyers think that these blankets may double last year's sales, at the expense of other sizes and other fibers and blends.

• **Bedspreads, woven and tufted, were slow.** Sales were strictly from inventory or on a hand-to-mouth basis. Few commitments were being made for so much as a month ahead.

• **Sheets and pillowcases,** usually moving faster as May "white sales" proceed, were quite spotty. Many sales fell flat because of bad weather.

• **Quilts and comforters were moving at somewhat better rate** than last year at the same time.

Over-all, stores were inclined to keep one eye on their inventories and the other on the weather. There was widespread feeling that a decided improvement in the weather would quickly lead to almost complete dissipation of inventories.

Hair Fibers Are Meeting Good Demand at Lower Prices

More-reasonable prices and style acceptance are giving vicuna, cashmere, and to some degree mohair a steady market demand.

Lessening of demand for mohair in Europe dropped the price of the Texas clip, and this year's supply is being sold largely in the United States. Growers and handlers are not satisfied with the price; and, encouraged by recent good demand, they upped the price 5¢ a lb.

The demand for cashmere has been level at a good rate for several weeks, and an increase is expected in June when cuttings for fall lines step up.

Vicuna, all but priced out of the market a few years ago, is meeting strong demand at $13 to $13.50 a lb., down from $22 a lb. two or three years ago. The main use for vicuna this year is in men's coatings.

Man-Made-Fiber Production Off 14% From 1957

Shipments of rayon and acetate fiber and yarn, excluding acetate staple and tow, dropped from 78,900,000 lbs. in March to 71-million lbs. in April, according to the Textile Economics Bureau.

That placed April shipments about 10% below March shipments and 19½% below April, 1957, shipments.

Domestic users received 69,900,000 lbs. of the April shipments, and 1,100,000 lbs. moved out of the U. S. as exports.

The biggest loss to rayon producers was in high-tenacity yarns, used mostly for tire cord. Shipments totaled 17,800,000 lbs. in April, down 23½% from March and 47½% from the 34-million lbs. shipped in April, 1957.

•

Total man-made-fiber production in the U. S. in the first quarter of this year was 371,300,000 lbs., a drop of 14% from the first quarter of last year.

The first-quarter total this year was made up of:

- Rayon and acetate—240,800,000 lbs.
- Glass fiber—22,000,000 lbs.
- Noncellulosics—108,500,000 lbs.

that helps to put fiber, cotton and wool, on a supply-and-demand basis will be welcomed by most mill men.

On the textile-export side, some mills may be pinched. But even the pinch may be healthy. A large part of Canada's U. S.-imports woes can be traced to U. S.-mill dumping. And it is extremely difficult to defend dumping.

Pickup in Sales—Seasonal or Upturn?

There was a decided improvement in sales of textile goods last month, and market observers are pondering the question: Is it seasonal or the beginning of a firm upturn in business?

Continued bad weather into late spring delayed seasonal buying, but some of the improved market tone could not be attributed to seasonal factors.

Here's how some segments of the market moved:

• **Print cloth.** Buying improved somewhat, and price shading got rarer on most print-cloth constructions during the month.

About the middle of the month standard-quality 39-in., 80x80, 4.00-yd. print cloth was moving at 17¼¢, and most mills were reluctant to quote for delivery beyond September.

As price shading declined, a shopper for several million yards at 17⅛¢ for immediate delivery was receiving no bidders.

The general feeling was that business is better than most observers think and that order backlogs at the end of the second quarter will be considerably improved.

• **Cotton yarns.** Underwear and outerwear knitters moved into the market at an improved rate. Price shading on cotton yarns was discontinued by most mills about the middle of the month.

Buying was as far ahead as early third quarter; but, as in the case of print-cloth mills, yarn mills shied away from commitments beyond the early part of the third quarter.

Expectations of an important buying surge building up were fairly widespread.

• **Man-made-fiber fabrics.** Buying was the heaviest since the turn of the year. Mill-order backlogs improved to the point that price gains of 5% to 10% were marked up by some staple fabrics.

Yarns firmed to list prices, after several months of shading.

Nylon and acetate sheers and taffetas for spot delivery led the fabric sales. Supplies tightened by the middle of the month, and delivery dates were running into late June and early July.

• **Corduroys.** The story here was about the same as for print cloth, man-made-fiber fabrics, and cotton yarns: price shading halted, delivery dates pushed further ahead, and hesitancy on the part of mills to make commitments too far ahead.

• **Socks and stockings.** Women's seamless hosiery moved steadily, but full-fashioned hosiery eased somewhat. Men's socks were still being bought for immediate needs only.

But knitters continued to knit for inventory, confident that buying will pick up soon because of the low state of inventories in the hands of their customers.

• **Woolen and worsted.** The market was quiet on woolens and worsteds, but wool knitting yarns picked up. Prices firmed and some rose as much as 5¢ a lb. Top makers noticed a pickup in

sales strong enough to advance prices 3¢ to 4¢ a lb. Some resistance to the new prices developed, but top makers held firm.

• **Denims.** Cone Mills led the way in reaffirming present denim prices on the basis of 37½¢ for 28-in., 10-oz.-per-sq.-yd. work denim through July, August, and September.

Both mills and cutters find this price profitable at present, and Cone's move was made for the sake of continuing the market steady.

•

A great deal of this market activity is seasonal.

Textile World's Index, p. 12, estimated, leveled this month at 95 (1954 = 100). In each of the previous three years charted on p. 12, with the exception of 1956 when production and sales were dropping rapidly, the Index leveled or went up either from March to April or from April to May, depending on the lateness of good weather.

But many observers read more than seasonal improvement in last month's market activity. Even on nonseasonal goods, there was a widespread feeling that bargain-buying is over. Firm or rising prices, an end to price shading, and better order backlogs gave a decidedly healthy tone to the market.

[See "Mill Margins Signal A Business Upturn," p. 69.]

Britain To Limit Imports

LONDON—Great Britain has reached agreement in principle with India and Pakistan to place ceilings on cotton-cloth exports to Britain. Details of the quota plans have not been worked out yet, but British mills are pleased at the first-step success in winning agreement to the principle.

Hong Kong, also a troublesome exporter to Britain, said in March that it would limit exports if India and Pakistan do.

Lancashire mills look on these agreements as a major victory.

In March, for the third time in some 200 years, Britain imported more cotton cloth than it exported. The other two times this occurred were less than a year ago, first in June and then in October.

Imports of cotton cloth rose nearly 20-million sq. yds. from February to March this year and totaled 44,617,000 sq. yds.

Exports rose 5.5-million sq. yds. from February to March and totaled 40,262,000 sq. yds.—4,355,000 sq. yds. less than imports.

•

Talks between Britain, India, and Pakistan industry leaders ended in agreement about the middle of last month, and the British Cotton Board promptly announced that imports would be controlled by the Asian countries.

Some trouble is expected when the work of setting the actual ceilings gets under way. The three countries have "some differences of opinion" on what type of ceilings to set and what they should be.

There is some speculation that an over-all ceiling figure will be set, but some industry leaders think that the ceilings are more likely to be worked out for each country on the basis of its past exports to the U.K.

Senate Is Battleground For Reciprocal-Trade Bill

Protectionists are looking to the Senate as the real battleground on which the Congressional battle over reciprocal trade will be won or lost. Strongest and best organized blocs are Southern and Western Senators whose constituents include domestic textile, oil, and nonferrous-metals producers.

The drive for restrictions on the President's trade-agreement extension bill in the House centered around two things:

• Curbs on White House veto power over Tariff Commission recommendations in escape-clause cases.

• Change in the so-called national-security provision of the law to permit more domestic industries to appeal easier and quicker to the Office of Defense Mobilization for a decision that imports are endangering the nation's defense position.

•

What Senate protectionists want is specific commodity import barriers against foreign competition in oil, metals, and textiles.

Similar sentiment in the House failed to get quota limits in the bill reported out by the House Ways and Means Committee.

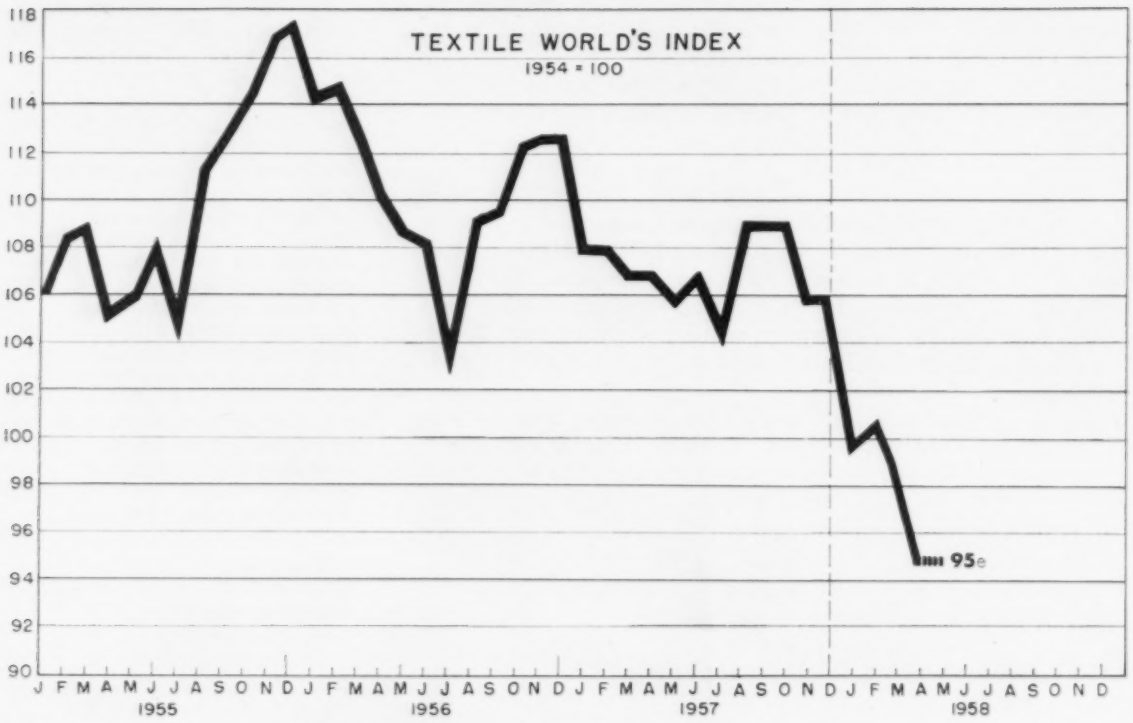
In the Senate, debate and amendments to the bill cannot be controlled as tightly as under House rules; so commodity quotas will be proposed on the Senate floor if they are not adopted formally by the Senate Finance Committee, which handles all trade legislation in the upper chamber.

•

The key question is whether quota-minded Senators can pool their strength.

Majority Leader Lyndon Johnson (D.-Tex.) is on record in favor of more protection for independent domestic oil producers. His Number Two man, Democratic Whip Mike Mansfield (D.-Mont.), heads a powerful group of Western-state Senators who are concerned about copper, lead, and zinc mines in their area. Textile mills count heavily on the support of Senators from Alabama, Georgia, Mississippi, and the Carolinas.

Lined up against quotas, however, are the Administration and the record of trade-bill debate in the House, as well as such liberal-trade proponents as Sens. Paul Douglas (D.-Ill.) and Albert Gore (D.-Tenn.). It will be harder for quota amendments to pass the Senate in view of the lengthy compromise conference they would require with the House.



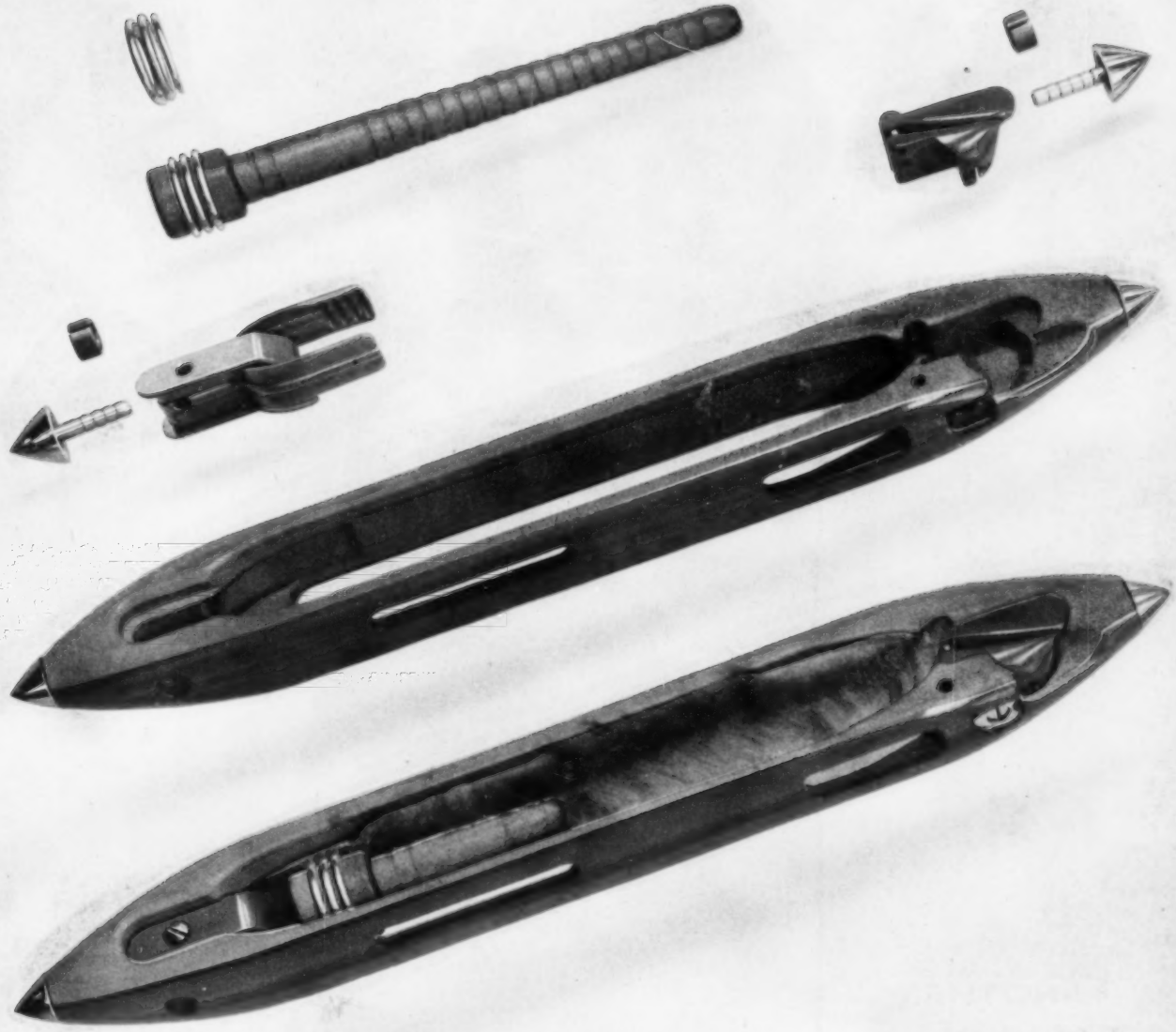
Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954 = 100)	**95**	**95**	**106**
Employment (thousands) B.L.S	922.5	934.0	1012.1
Production Workers (thousands) B.L.S	831.6	843.0	919.4
Weekly Earnings B.L.S	$54.60	$56.25	$57.90
Hourly Earnings B.L.S	$1.50	$1.50	$1.50
Weekly Hours Worked B.L.S	36.4	37.5	38.6
Production Index (1947–1949 = 100) F.R.B	94	94	99
Wholesale Price Index (1947–1949 = 100) B.L.S	93.7	94.0	95.3
Manufacturers' Sales (million $) Commerce	999	1,001	1,144
Manufacturers' Inventories (million $) Commerce	2,625	2,638	2,692
Inventories-to-Sales Ratio	2.63	2.64	2.35
Exports (million $) Commerce	118.0	129.9	173.4
Imports (million $) Commerce	69.9	87.2	77.2
Stock Price Index (1941–1943 = 10) Standard & Poor's	20.42	19.27	21.56
Failures (number) Dun and Bradstreet	8	8	7

National Economic Indicators

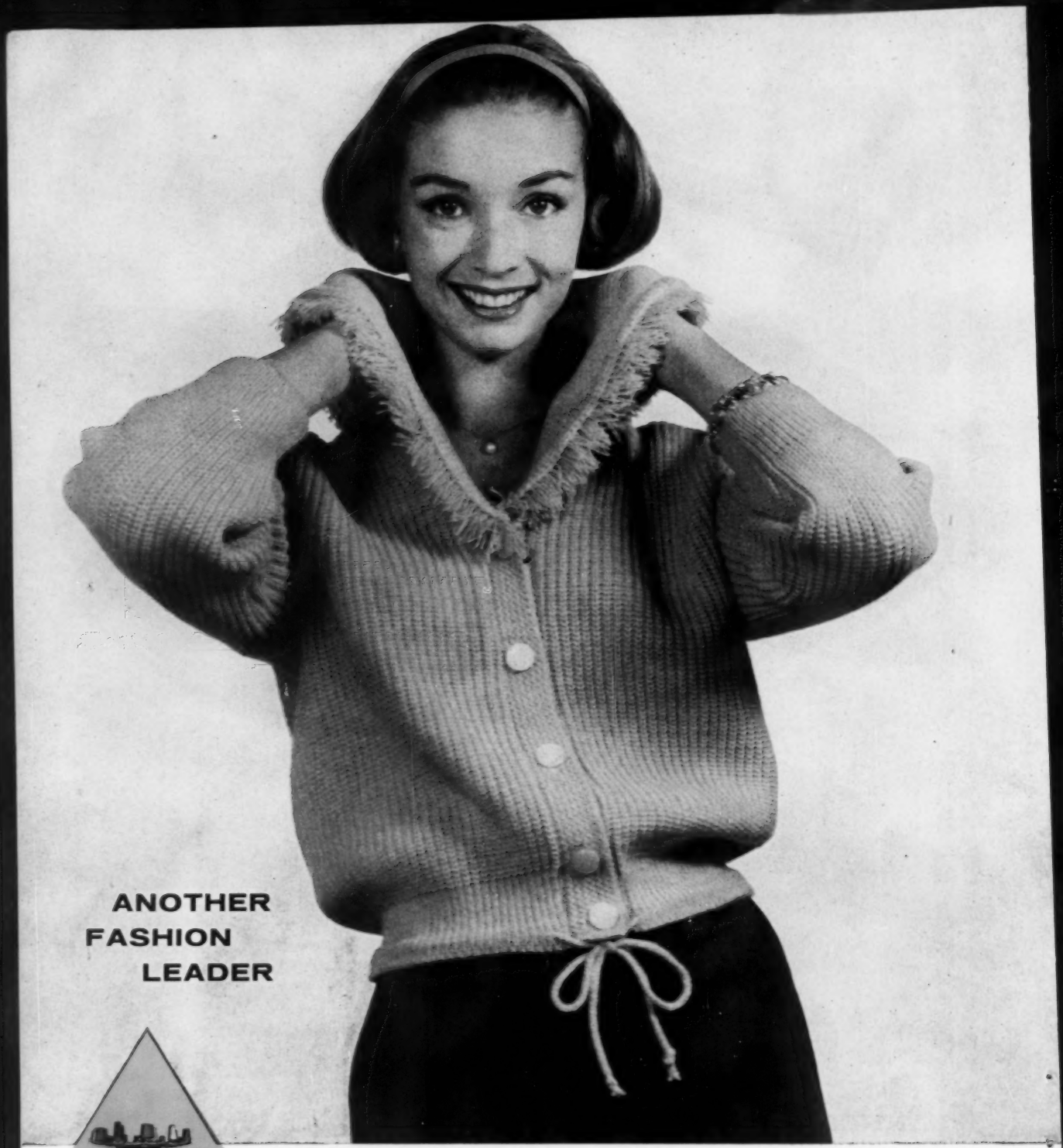
	Latest Month	Previous Month	Year Ago
Industrial Production (1947–1949 = 100) F.R.B	126	128	144
Consumer Prices (1947–1949 = 100) B.L.S	123.3	122.5	118.9
Wholesale Prices (1947–1949 = 100) B.L.S	119.4	119.7	117.2
Population (millions) Census	170.8	170.6	167.7
Unemployment (millions) Census	5.1	5.2	2.7
Employment (millions) Census	62.9	62.4	64.3
Personal Income (billion $) Commerce	342.8	342.2	341.1



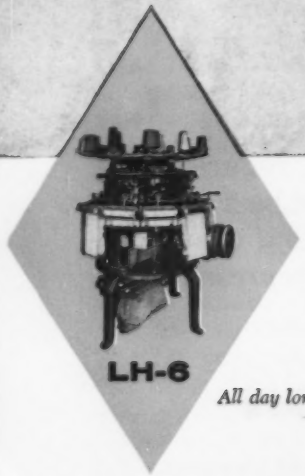
PLANNED QUALITY! Quality doesn't just happen at Draper . . . it is the result of careful planning and engineering. Each part, regardless of size, shape, or material, is designed to do a specific job in the best possible manner. New parts, *as illustrated above*, are constantly being developed to increase your mill efficiency and profits. *See your Draper representative today* for cost-saving parts and mechanisms.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.



ANOTHER
FASHION
LEADER



"Bulky Knits" . . . from the Wildman Jacquard LH-6

This versatile knitting machine keeps pace with sales trends by producing a wide range of outerwear • The LH-6 will knit plain jersey with 2x2 cuff, or any other rib . . . links and links . . . cross links and links . . . reverse jersey or plain knits • *For complete technical data, write for bulletin LH-6.*

All day long . . . sweaters belong

WILDMAN / JACQUARD

a subsidiary of Draper Corporation, Hopedale, Mass.

WILDMAN JACQUARD CO. • 1210 STANBRIDGE STREET • NORRISTOWN, PENNSYLVANIA

Manufacturers of HEMPHILL BANNER Knitting Machines

Alice Mfg. Co., Easley, S. C., will build a one-story brick plant of 250,000 sq. ft. this summer. It will house about 40,000 spindles and associated equipment. The plant will be built on a 200-acre tract adjoining the site of the company's Elljean plant.

Augusta Knitting Corp., Utica, N. Y., has changed its name to Jones Knitting Corp. The company produces men's underwear and sportswear.

Beaumont Mills, Spartanburg, S. C., has installed new Draper X-2 looms. The company has also installed new spindles and a monorail system of blower cleaners in the spinning department.

Berkshire Hathaway, Inc., Providence, R. I., has sold its curtain division in Warren, R. I., to Pilgrim Curtain Co.

Bibb Mfg. Co., Macon, Ga., has bought Ensign Textile Mills, Forsyth, Ga., formerly operated by Burlington Mills. A woolen-fiber system has been installed, and production is expected to start in a few months.

Burlington Decorative Fabrics Associates, New York, N. Y., has changed its name to Burlington House Fabrics Co. As Burlington House Fabrics Co., it will continue to be a major producer of upholstery, draperies, slipcover, and mattress-ticking fabrics as well as ready-made draperies.

Burlington Industries, Inc., Gastonia, N. C., has transferred its Modena Plant from the Cramerton Div. to Klopman Mills, another division of Burlington Industries, Inc. The plant makes spun-rayon and blended yarns.

Cabin Crafts, Inc., Dalton, Ga., is building an addition to its Springdale plant. The 75,000-sq.-ft. addition will place the entire carpet operation under one roof with the exception of a small amount of piece dyeing.

Cosmos Imperial Mills Ltd., Yarmouth, N. S., has installed a felt-producing loom purchased from Crompton & Knowles Co., Worcester, Mass.

Delmarva Narrow Fabrics, Inc., Easton, Md., has returned to its former management. All outside interests in the company have been bought by its original president, Charles W. Kleppinger, Sr. Mrs. Dorothy H. Kleppinger has been named vice president. C. W. Kleppinger has been named secretary and manager of the company.

Gastonia Textile Mfg. Co., Gastonia, N. C., has received a charter to carry on a general knitting business with an authorized capital of $50,000.

Greenwich Printing & Dyeing Co., Inc., East Greenwich, R. I., is for sale. The plant, which once employed 185 people in printing, dyeing, bleaching, and finishing cotton goods, had closed down. The asking price is $105,000.

A. D. Juilliard & Co., New York, N. Y., has sold its Mill No. 1 at Stottville, N. Y., for about $15,000.

The Kendall Co., Boston, Mass., has sold its former plant in Thrift, N. C., to a syndicate for reletting for textile operations.

Mayfair Chenilles, Inc., Div. of Collins & Aikman Corp., Dalton, Ga., has started building an addition of 38,500 sq. ft. to its plant on Abutment Road.

McCrary Hosiery Mills, Asheboro, N. C., has instituted the multiple-machine knitting system. This change has idled over 100 knitters but leaves the company with a work force exceeding 1,500.

Merrimack Mfg. Co., Lowell, Mass., is liquidating its gray mill consisting of 50,000 spinning spindles, 161 40-in. cards, 12 combers, 8,240 twisting spindles, and 1,700 looms. None of the dyeing and finishing machinery is being offered for sale in this liquidation.

Montreal Cottons Ltd., Valleyfield, Que., a subsidiary of Dominion Textiles Ltd., Montreal, Que., is completing construction of a textile plant costing about $5,000,000.

Old Fort Finishing Co., Old Fort, N. C., is building a warehouse addition of 62,000 sq. ft. It is to be completed about Sept. 1.

Phoenix Hosiery Co., Milwaukee, Wis., has designed a year-round gift package for ties and socks. The package has a harlequin design in gray and gold on a white ground.

Pontiac Weaving Corp., formerly of Pawtucket, R. I., has consolidated its operations in part of the plant space once occupied by Almardon Mills, Lonsdale, R. I.

Roxbury Carpet Co., Saxonville, Mass., has sold seven buildings and 218,000 sq. ft. of land to four commercial firms in Worcester. Worcested Knitting Co. bought two of the buildings: the four-story former Whittall Administration Building and the one-story wash house, representing 100,000 sq. ft. of working space.

Southern Weaving Co., Greenville, S. C., has acquired all capital stock of Hudson Narrow Fabric Mill, Easley, S. C. The Easley plant will operate as a wholly owned subsidiary.

Standard-Coosa-Thatcher Co., Gadsden, Ala., has named Frank G. Binswanger, Inc., exclusive agent for the sale or rental of the former Sanquoit Plant.

Textile Industries Ltd., Guelph, Ont., is building a one-story addition at a cost of about $18,000.

USF-Aspinook Finishing Div., Gera Corp., Norwich, Conn., has announced that it will discontinue operations.

CONTINUED ON PAGE 148

Textile World

CALENDAR

June

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 4

Tufted Textile Manufacturers Association, annual convention, Daytona Plaza Hotel, Daytona Beach, Fla., June 4 to 7

National Materials Handling Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

National Conference on Materials Handling, sponsored by American Society of Mechanical Engineers, to be held concurrently with the National Materials Handling Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

Gordon Research Conference on Textiles; Colby Junior College, New London, N. H.; New Hampton School, New Hampton, N. H.; Kimball Union Academy, Meriden, N. H., June 9 to August 29

Advanced course in Quality Control by Statistical Methods, Purdue University, Lafayette, Ind., June 10 to 20

Woolen-Yarn Manufacturing Course for woolen-mill trainees, second hands, and similar personnel, sponsored by Davis & Furber, N. Andover, Mass., Lowell Technological Institute, Lowell, Mass., June 16 to 27

Southern Textile Association, annual convention, Grove Park Inn, Asheville, N. C., June 19 to 21

American Society for Testing Materials, annual meeting, Hotels Statler and Sheraton-Plaza, Boston, Mass., June 22 to 27

August

Massachusetts Institute of Technology, summer program, Techniques in Textile Research, Massachusetts Institute of Technology, Cambridge, Mass., Aug. 18 to 22

September

The Fiber Society, Inc., fall meeting, Queen Elizabeth Hotel, Montreal, Que., Sept. 9 & 10

Combed Yarn Spinners Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 11 & 12

AATCC, Piedmont Section, Hotel Charlotte, Charlotte, N. C., Sept. 19 & 20

Textile Quality Control Association, fall meeting, Grove Park Inn, Asheville, N. C., Sept. 25 & 26

Northern Textile Association, annual meeting, Wentworth-by-the-Sea, Portsmouth, N. H., Sept. 25 & 26

October

National Cotton Council, Chemical Finishing Conference, Washington, D. C., Oct. 1 & 2

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 6 to 10

North Carolina Textile Manufacturers Association, Carolina Hotel, Pinehurst, N. C., Oct. 9 & 10

Georgia Textile Operating Executives, fall meeting, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 11

American Society for Testing Materials, Committee D-13, fall meeting, Sheraton-McAlpin Hotel, New York, N. Y., Oct. 14 to 17

Textile Recorder International Textile Machinery & Accessories Exhibition, Belle Vue, Manchester, England, Oct. 15 to 25

Southern Textile Methods & Standards Association, Clemson House, Clemson, S. C., Oct. 23 & 24

Alabama Textile Operating Executives, fall meeting, Thach Auditorium, Auburn, Ala., Oct. 25

Carded Yarn Association, annual meeting, The Homestead, Hot Springs, Va., Oct. 28 to 31

AATCC, national convention, Hotel Conrad Hilton, Chicago, Ill., Oct. 30 to Nov. 1

November

Textile Seminar, sponsored by University of Georgia, Div. of Clothing and Textiles in Extension, Teaching, Research, Georgia Center for Continuing Education, Athens, Ga., Nov. 7 & 8

Narrow Fabrics Institute, annual meeting, Hotel Roosevelt, New York, N. Y., Nov. 17 to 19

1959

January

Plant Maintenance & Engineering Show, International Amphitheatre, Chicago, Ill., Jan. 20 to 30

March

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 19 to 21

THREAD CONES · YARNS · FABRICS · SUITINGS
WADDINGS · BLANKETS · BEDDING · CARPETING

Whatever your products, you can package for sales advantages with

THILCO "Brand Name" PROTECTIVE PAPERS

Overall decorated roll wrap

Don't worry about protection. Thilco TEXTILE Wraps for any specific requirement give you the very best. *But that's not all by any means!* Thilco papers can be colorfully PRINT-DECORATED to give you all the benefits of "Brand Name" packaging at all merchandising levels. And, you can get all this with its many other sales values *for just a few cents more* than the cost of plain, unidentified wrappings! Thilco TEXTILE Wraps run the gamut from lightweight, special treated tissues and krafts to heavy-duty protective wraps for transport and storage.

Decorated Waxsorb cone wrap

COMBINE PROTECTION WITH IDENTITY FOR THESE IMPORTANT SALES ADVANTAGES:—

- Provide brand name identity through entire distribution sequence
- Help trade-up product's quality
- Add colorful eye and buy appeal
- Increase prestige value
- Stimulate repeat orders
- Reduce labeling and packaging costs
- Simplify inventory control
- Eliminate "look-alike" competition
- Provide low cost "traveling" advertising

FREE SAMPLE KIT
Contains all popular grades of Thilco Textile wraps—write today.

THILCO
Functional Papers
FOR TEXTILES

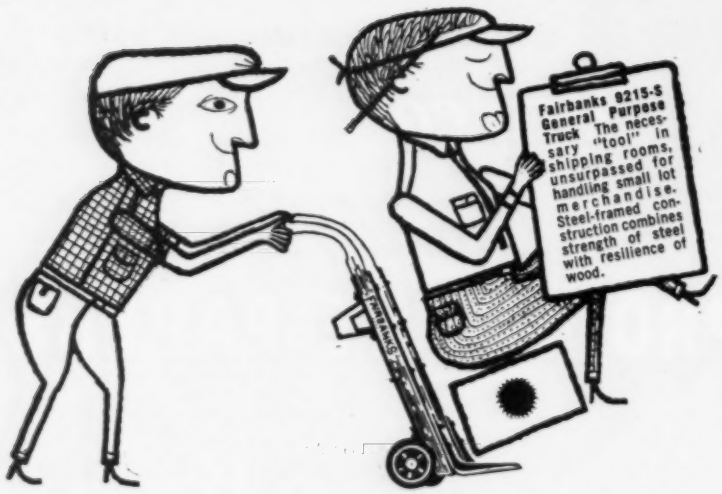
OFFICES
NEW YORK
BOSTON
CHICAGO
DETROIT
CINCINNATI

Decorated protective fabric wrap

THILMANY PULP & PAPER CO. · KAUKAUNA · WISCONSIN

For more data, write this page number on Reader-Service card. →

HOW TO DO THE DIFFICULT


Fairbanks 9215-S General Purpose Truck The necessary "tool" in shipping rooms, unsurpassed for handling small lot merchandise. Steel-framed construction combines strength of steel with resilience of wood.

Have happier workers and a happier boss both achieved by use of FAIRBANKS COST-CUTTER TRUCKS!

Just think of trucks as tools. Then you instantly recognize that the right trucks must make lighter work of materials handling. Your men with the right tool—the right truck—do more with less effort and with *greater safety*. You realize surprisingly large time and cost savings. Select your COST-CUTTER Truck now from Fairbanks complete line of Two Wheel and Platform Hand Trucks. Always specify Fairbanks Trucks for the rugged construction and smoother operation that brings added savings in long-lasting dependable service. Fairbanks Trucks are available from leading distributors in all the principal cities.

YOURS ON REQUEST: Big colorful catalog, #T-54, describes most complete line of trucks and applications. Write for your free copy of this valuable catalog today.

Fairbanks "Bantamweight" Platform Trucks
Sturdiest, lightest, easiest moving truck for all light duty applications. Unmatched value — costs less to buy, less to run.

Fairbanks Series "500" Lift Jack Trucks
One jack handle sufficient for several platforms. The perfect answer to minimum cost temporary storage.

THE FAIRBANKS COMPANY

Executive Office — 393 Lafayette Street, New York 3, New York
Valves • Dart Unions • Trucks • Casters • Wheels
• 520 Atlantic Avenue, Boston 10, Mass. • 393 Lafayette Street, New York 3, N. Y. • 15 Stanwix St., Pittsburgh 22, Pa. • 202 Division St., Rome, Ga. • **Factories** — Rome, Ga. and Binghamton, N. Y.

Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

THE HOW-AND-WHY APPROACH TO BETTER SUPERVISION

Dear Editor:

The brief HUMANICS on supervisory training in the March issue of TEXTILE WORLD was especially interesting to us because of an article on the subject that we published in *Foreman & Supervisor* the same month.

The woods are full of publications that tell supervisors what to do. However, we still firmly believe that the best way to get supervisors to adopt better methods is to prove to them how and why these procedures are better.

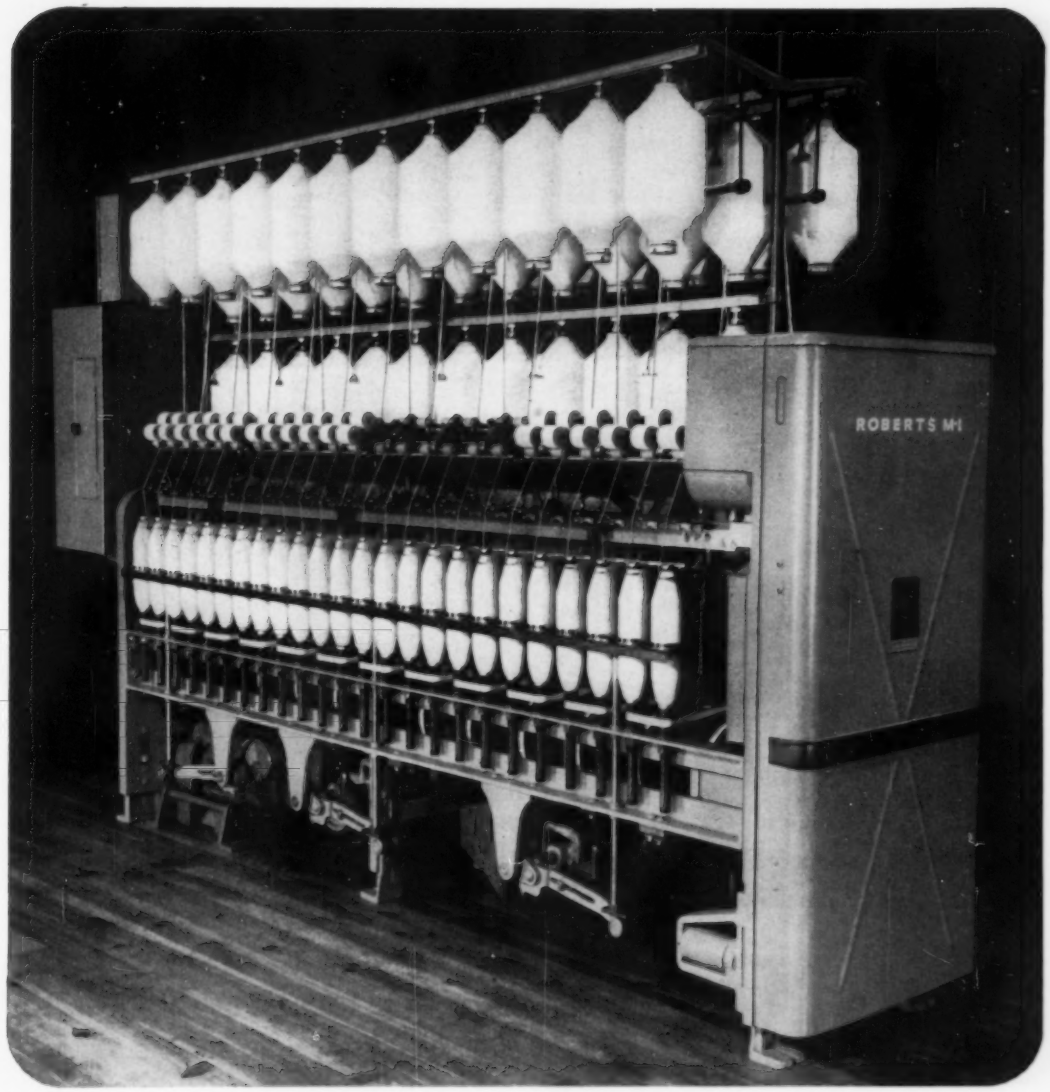
MORT FRIEDLANDER
Executives' Service, Inc.
Mystic, Conn.

CONTROLLING HOSIERY LENGTHS

Dear Editor:

We read the article, "New Techniques To Solve Hosiery-Length Problems," [TEXTILE WORLD, Jan., '58, p. 82] with great interest. We have been working along the lines mentioned in the article.

We have had parts such as throat plates, stitch cams, and sinker cams flame plated; and this treatment has helped to make length problems easier. We use a specially constructed gun to blast particles of tungsten car-



ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

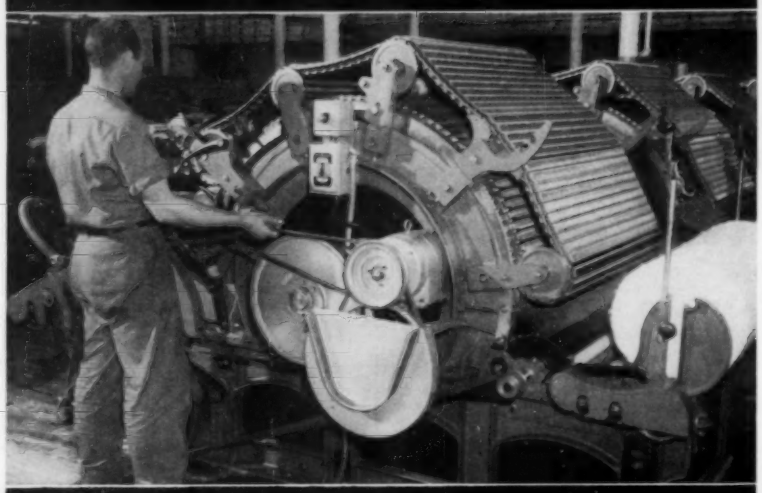
The benefits of BIG PACKAGE SPINNING are available **AT $32 TO $40 PER SPINDLE INSTALLED** in your mill, depending on gauge and frame lengths. These frames produce better yarns at higher front roll speeds and put more ounces of yarn on the bobbin.

More than 250 Roberts narrow frames have been installed in mills during the past eighteen months.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

For more data, write this page number on Reader-Service card. →

newest, most widely specified card drive . . .



BOOSTS PRODUCT QUALITY AND OUTPUT, CUTS OPERATING, MAINTENANCE COSTS

The textile industry's newest, most widely specified and least expensive card drive, manufactured by T. B. Wood's, is a simple, smooth-starting unit designed to provide years of trouble-free service.

Wood's drive offers the many advantages of individual card drives, but has no clutches and gear reducers to adjust, maintain and lubricate. Cumbersome flat belt pulley and lineshaft construction and accompanying hazards and power losses are eliminated. In case of motor or mechanical failure, only one card is idled.

Improved product quality and quantity are assured through elimination of belt slip and better control of operating speeds as well as reduction of static and the amount of lint and dirt in the atmosphere.

Contact your T. B. Wood's representative for complete details and your copy of Bulletin No. 6100.

V-BELT DRIVES • VARIABLE SPEED DRIVES • TIMING BELT DRIVES • CARD DRIVES • FLEXIBLE AND RIGID COUPLINGS • FLYWHEELS • PULLEYS • MOTOR BASES • BALL BEARING PILLOW BLOCKS, FLANGE UNITS AND TAKE-UP BEARINGS • BABBITTED AND BRONZE BEARINGS • DUCTILE IRON PRODUCTS

Wood's

T. B. WOOD'S SONS COMPANY
CHAMBERSBURG, PENNSYLVANIA

CAMBRIDGE • NEWARK • DALLAS • CLEVELAND • ATLANTA

bide on the surface of the plate or cam.

Particles of tungsten carbide are fed into the chamber of the gun and suspended in a mixture of oxygen and acetylene. When this mixture is ignited, a detonation takes place.

The detonation wave travels at 10 times the speed of sound through the barrel heating the particles of tungsten carbide to plasticity. The particles are hurled out of the gun barrel and embedded in the surface of the piece to be plated. A microscopic welding action takes place to produce a tenacious bond on the surface.

Although the temperature of the gases inside the gun barrel reach 6,000° F., the temperature of the part being plated seldom reaches 400° F.; so there is little chance of the part warping. The part is then polished according to its end use.

THOMAS A. FULTON
H. E. Crawford Co., Inc.
High Point, N. C.

NYLON TYPE INCORRECTLY STATED

Dear Editor:

In your item "Protection for Nylon," [TEXTILE WORLD, March, '58, p. 117] you refer incorrectly to nylon Type 320 as having good inherent resistance to weathering. The nylon referred to is actually Type 330.

GLADYS HARGREAVES
Aeronautical Materials Laboratory
Naval Air Material Center
Philadelphia 12, Pa.

MORE ON CONTROLLING SIZE-BOX TEMPERATURE

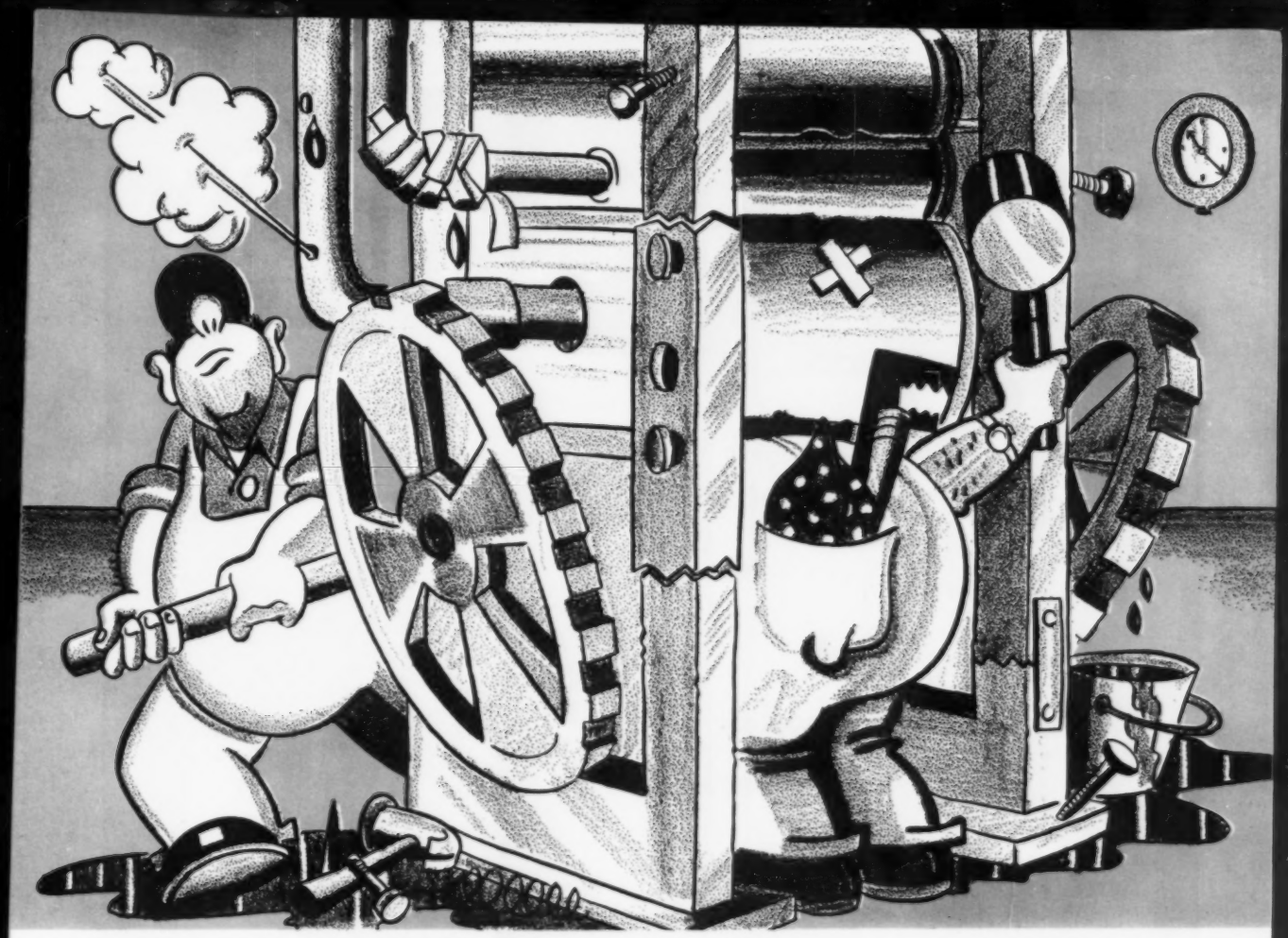
Dear Editor:

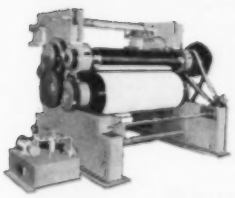
On page 144 of the January issue of TEXTILE WORLD there is an item (No. 1349) on the control of size-box temperature. I would like to add to the information given in the item.

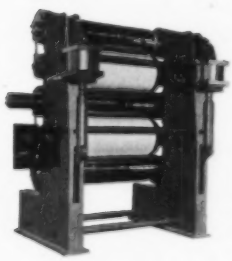
Size is cooked in regular kettles with open steam coils for about 1½ to 2½ hrs., depending on the type of starch. The size is then pumped to a storage kettle where the temperature is maintained at 180 to 190° F. The storage kettles have closed steam coils and slowly moving paddles that keep the size from breaking down.

The size is pumped from the storage kettles into the size boxes and brought back to a temperature of about 208° F. A circulating system that re-

← For more data, write this page number on Reader-Service card.







THE MILL THAT NEEDS A MODERN CALENDER IS ALREADY PAYING FOR IT

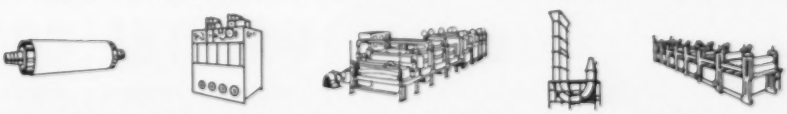
Worn, antiquated calenders skim the cream off your profits by inferior finishes, lower production, greater down time, and higher maintenance.

The profit making advantages of McKiernan-Terry open face calenders have been proven in service by leading finishing plants. You, too, can solve your calendering problems with this modern equipment.

We welcome your inquiries.

MANUFACTURING ENGINEERS · McK T · ESTABLISHED 1895 ·

McKIERNAN-TERRY CORPORATION



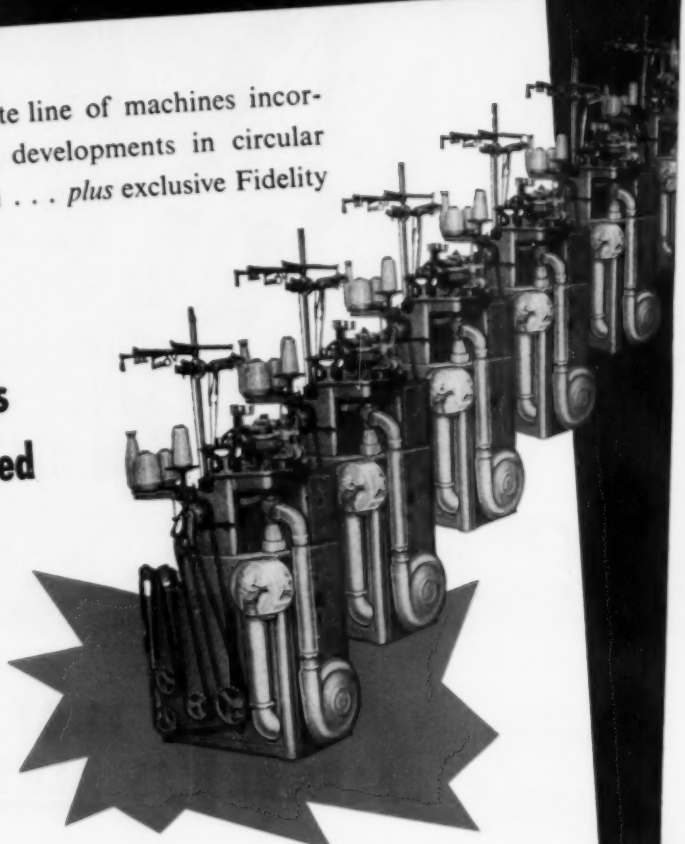
FILLED ROLLS · MULTI-STAGE WASHERS · CHAINLESS MERCERIZERS · J-BOXES · OPEN WIDTH WASHERS

Textile Machinery Div., Dover, N. J. • Roll Div., Harrison, N. J.

Southern Representative — Industrial Equipment Co., 812 Johnston Building, Charlotte, N. C.

FIDELITY for SEAMLESS

Only Fidelity offers a complete line of machines incorporating *all* the outstanding developments in circular knit hosiery equipment design . . . *plus* exclusive Fidelity electronic control!



400 or 474 Needles

- **Single or Double Feed**
- **Automatic Tension Device**
- **Plain, Mesh or S-T-R-E-T-C-H**
- **Individual Motor Drive with . . .**
- **Electronic Push Button Control**

You select the performance features *you* want . . . when you select a Fidelity. See the *complete* Fidelity line in operation at our showrooms . . . or write for stocking samples today.

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 11 BROADWAY, NEW YORK 4, N.Y.

SOUTHERN REPRESENTATIVE: C. S. BRANNOCK, P.O. BOX 763, MT. AIRY, NORTH CAROLINA

← For more data, write this page number on Reader-Service card.

turns the overflow to the storage kettle will improve uniformity of size and help eliminate hard spots on the yarn.

WALTER FREDERICK
West Point, Ga.

TROUBLEMAKERS IN THE MILL ARE NOT ALL ALIKE

Dear Editor:

Many supervisors make the mistake of classifying all nonconformists on their job as troublemakers. They often consider it easier to release such employees than to try to find out what makes them act as they do.

Of course, most supervisors have so many other problems that they can't devote their time to workers' personal problems. But to dismiss an employee because he is a troublemaker without an attempt to learn the cause of his actions is a short-sighted policy. His successor may be an even worse troublemaker, or the root of the problem may lie with the job or with the supervisor himself.

One employee may be going through a period of adjustment, on the job or at home. Another may be physically or mentally ill. Still another may not have enough work to keep his energies confined to constructive tasks.

So don't put the label of troublemaker on an employee because he doesn't act exactly as you want him to. At least find out why he doesn't conform before you take drastic action that may cause you to lose a potentially good employee.

GEORGE M. DODSON
Harrisburg, Pa.

TEXTILE WORLD'S NEW APPROACH INDICATES MATURE ATTITUDE

Dear Editor:

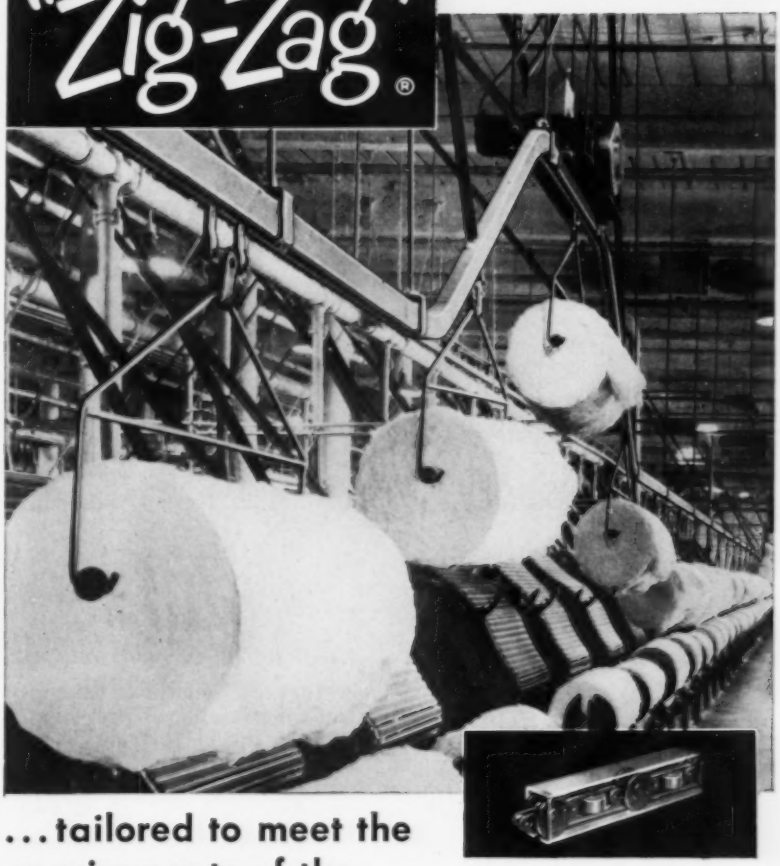
It was gratifying to read articles bent toward the engineering approach to textile processing in the March issue of TEXTILE WORLD. This approach is indicative of the more mature attitude of an industry that, for centuries, looked upon its endeavor as an art rather than as a science.

Our present age of science has created the tools that, if used with intelligence, could benefit this industry greatly. I hope that more of this type of article will be published in future issues of TEXTILE WORLD.

STUART D. SYNDER
Wilmington, Del.

R-W "Zig-Zag"®

CONTINUOUS POWER CONVEYORS



...tailored to meet the requirements of the Textile Industry!

Today's competitive textile market makes fast, efficient materials handling a *must* and production efficiency demands a constant flow of materials and maximum use of all available space. R-W "Zig-Zag" Conveyors effectively meet these demands by keeping things moving on the production line and utilizing, to full extent, valuable overhead space. R-W "Zig-Zag" Conveyors are extremely flexible . . . easily move up, down, in, out and around . . . carry unit loads up to 125 lbs. at speeds from one inch to 100 feet per minute. "Zig-Zag" systems may be easily altered, expanded or relocated by plant personnel.

"Zig-Zag"® QUALITY FEATURES

- **SAFE** . . . all moving parts are fully enclosed.
- **STRONG** . . . horizontal and vertical units alternate in a continuous chain traveling through a rugged steel track.
- **FLEXIBLE** . . . easily installed in any plant. Easily changed or relocated to meet plant alterations or expansion.
- **ECONOMICAL** to purchase, install and operate.
- **SPACE-SAVING** . . . available with standard horizontal or vertical curves . . . two-foot radius (others available).

WRITE TODAY for complete information Request Catalog No. A-93R

Leading manufacturer of Track Hangers, all types of hardware and Electric Door Operators for over 75 years.

Richards-Wilcox MANUFACTURING COMPANY
Materials Handling Division

446 W. THIRD STREET, AURORA, ILLINOIS • Branches in Principal Cities

PRESSURE
HORSEPOWER
AIR QUANTITY
PNEUMAFIL

When buying a vacuum collection system—look for . . .

LOW PRESSURES . . . HIGH PERFORMANCE!

NOW! **Extensive laboratory and field tests have provided this startling information about pressures and their relation to the performance of a vacuum collection system . . .**

LOW SUCTION PRESSURES—*and*—ASSURED BETTER CLEANING

Cleaning abilities of collection systems are based on the amount of air taken in at the drafting area. Pneumafil's special venturi flow and "matched" shape orifices pick up and handle **maximum air quantities** for **superior cleaning** at ideal performance pressures.

LOW SUCTION PRESSURES *for* PICKING UP THE END

Our years of studying and testing all kinds of yarn under actual mill conditions have established **correct** minimum pressures necessary to pick up the end! Pressures in excess of this minimum do not materially improve end pick up. Here again Pneumafil offers the money saving advantages of lowest pressures necessary to do the job (picking up the end), but still provides the plus benefits of higher air quantities for better cleaning.

LOW SUCTION PRESSURES *for* LOWER OPERATING COSTS

More cleaning of the yarn and frame, more balanced room conditions, and lower operating costs equal more profits. With Pneumafil you get all this and more at no additional cost. Advanced features designed and built into our most modern equipment **move more air at lower pressures and at less operating horsepower per CFM!** Here's where you can really put your finger on dollar savings. You'll be glad you bought Pneumafil.

PNEUMAFIL®

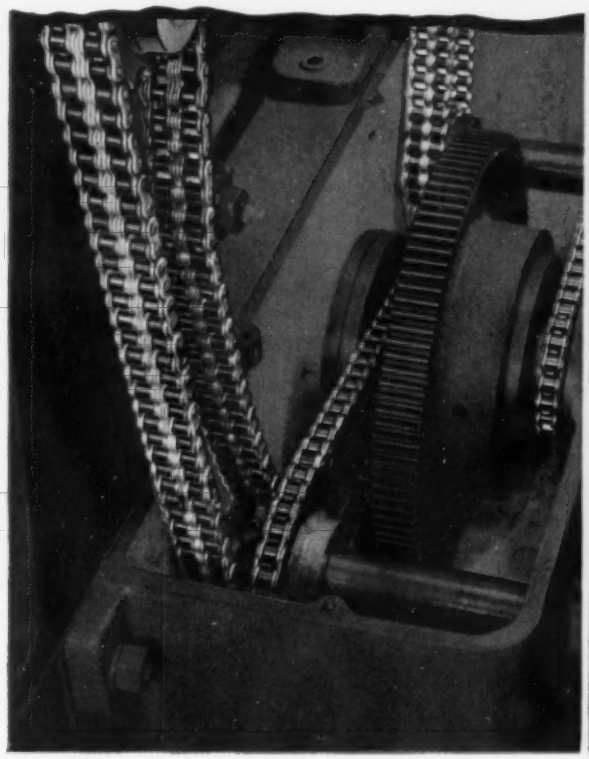
Contact us today for more information—

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA

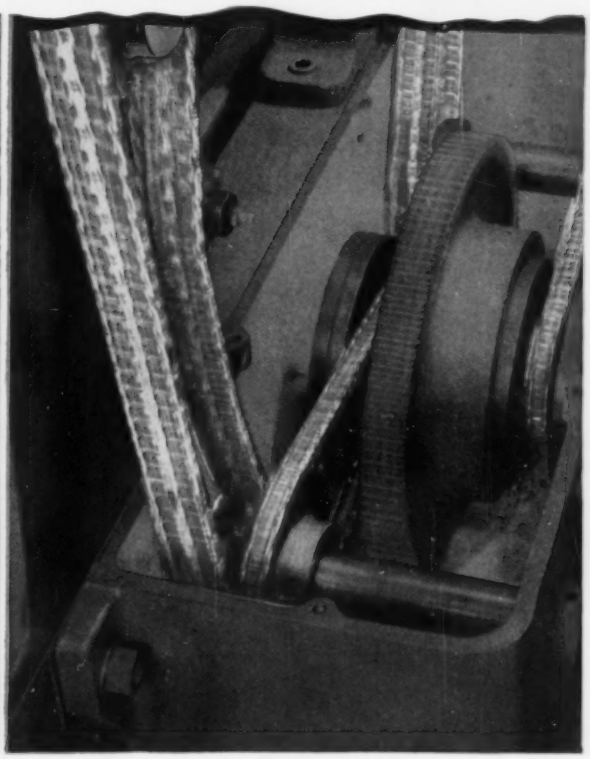
© 1958 Pneumafil Corp.

← For more data, write this page number on Reader-Service card.

To static strength . . . add *dynamic strength*



RESISTANCE TO TENSILE STRESS is achieved with properly heat-treated, accurately machined side bars made of premium steel and fitted with properly hardened pins, bushings, rollers.



STRENGTH OF CHAIN IN MOTION results from such refinements as pitch-hole preparation, micro-finish of parts, special processing of side bars, pre-lubrication, rigid quality control.

Why LINK-BELT roller chain takes stresses in stride

ON *tough-service* drives and conveyors, Link-Belt precision steel roller chain consistently delivers longer life. That's because its *greater dynamic strength* withstands the starting shock and centrifugal loads of severe operation.

Reports from users prove the effectiveness of Link-Belt's manufacturing extras that add to greater dynamic strength. Shot-peened rollers give greater fatigue life and ability to withstand impact . . . lock-type bushings end a common cause of chain stiffness . . . pre-stressing provides uniform load distribution . . . closer heat-treat control insures uniformity.

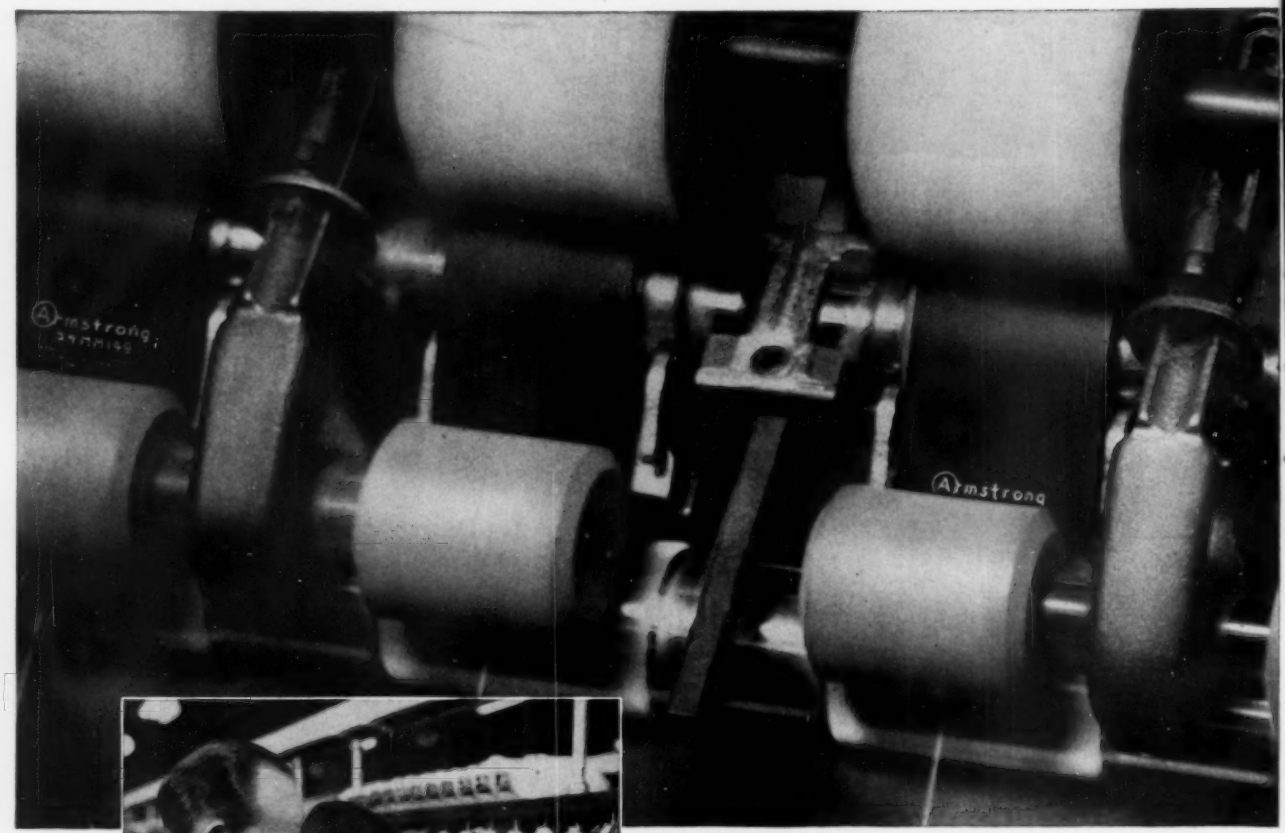
For facts, see your nearby Link-Belt office or authorized stock-carrying distributor. 14,543

LINK-BELT

ROLLER CHAIN AND SPROCKETS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N. S. W.; South Africa, Springs. Representatives Throughout the World.

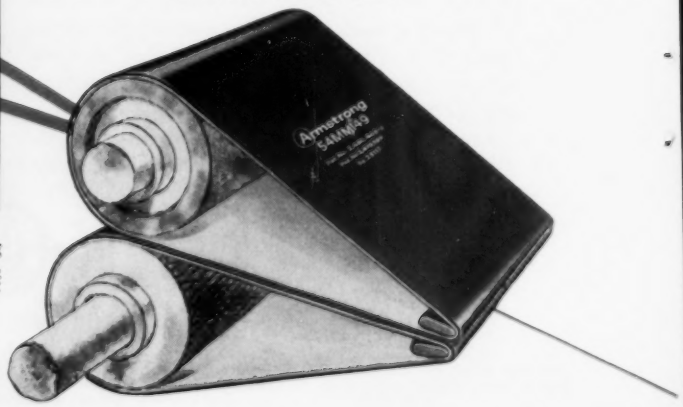
For more data, write this page number on Reader-Service card. →



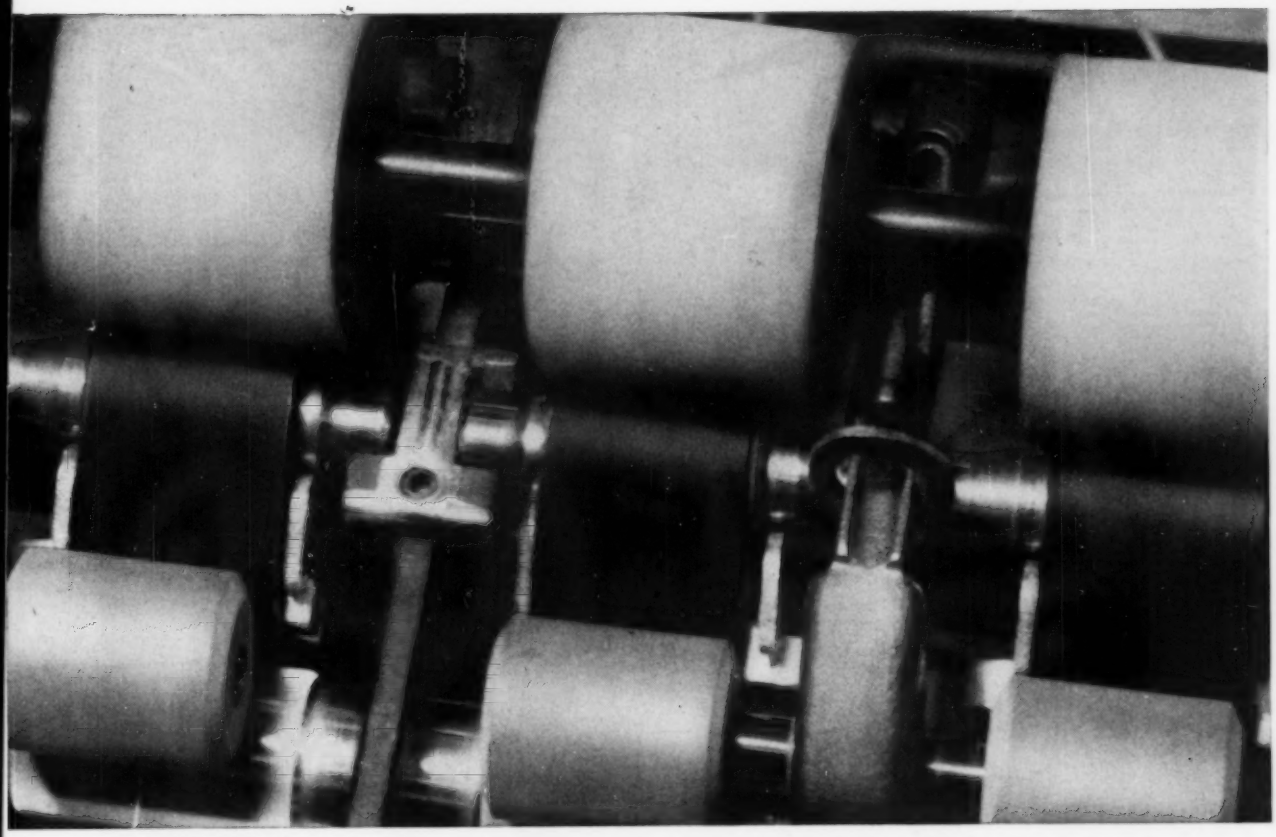
Why Armstrong

Because Armstrong Accotex Aprons give long spinning service, they help avoid down-time and reduce costs. Good yarn control at all times, right from the day of installation, means top-quality yarn.

In double-apron spinning, hundreds of mills use the black-and-white Accotex NO-7075 Apron.



← For more data, write this page number on Reader-Service card.



Accotex Aprons give you long, trouble-free spinning

Many mills report that Accotex Aprons are still spinning top-quality yarn for them years after installation.

This remarkable service record is the result of two things: the special compounding of the synthetic rubbers used, and the patented method of construction developed and patented by Armstrong textile research engineers.

The Armstrong aprons designed for double-apron spinning are made of two completely different rubber compounds. To achieve top-quality spinning, the black outer surface is given just the right surface friction to maintain good yarn control. The compound used in the white inner surface is designed to hold the drive roll without slipping, yet turn freely around the pins without buckling.

The special Armstrong sandwich construction combines these two synthetic rubbers with a tough, straight line cord interliner. The result is a smooth, seamless apron that cannot stretch or curl.

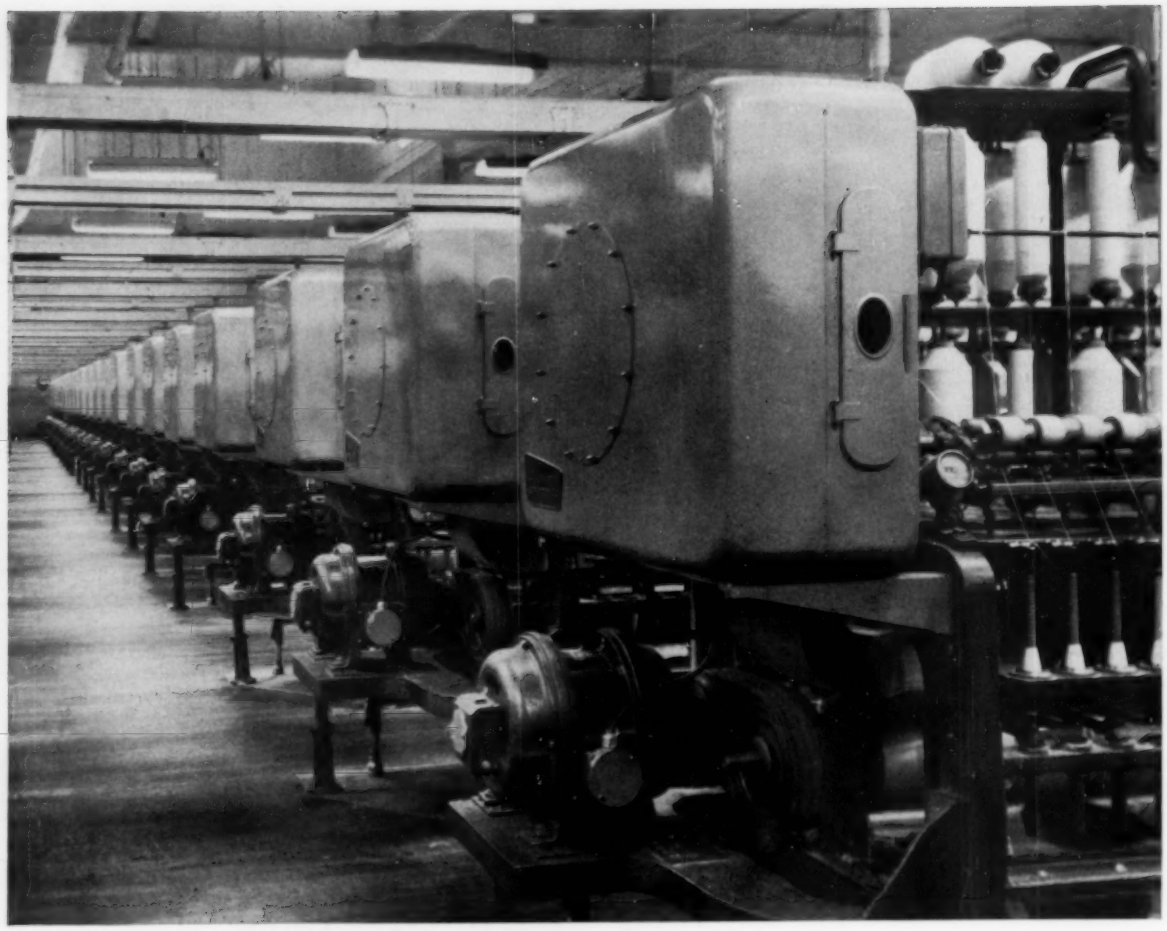
No matter what type of equipment you're using, there's an Accotex Apron specially engineered to meet your requirements.

For more information, send for the booklet, "Armstrong Textile Products." Write Armstrong Cork Company, Industrial Division, 6406 Dauphin Street, Lancaster, Pa. All Armstrong textile products are available for export.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

For more data, write this page number on Reader-Service card. →



JOANNA COTTON MILLS REPORTS

specific savings and 100% performance efficiency with

BAHNSON COLLECTO-VAC

"After conducting comparative studies on available end collection systems, we decided unanimously in favor of Bahnson Collecto-Vac," says Mr. J. L. Delany, General Superintendent at Joanna Cotton Mills, Joanna, S. C. "Our Bahnson Collecto-Vac is now in its 2nd year of operation in the mill. It has given us 100% trouble-free service. Since installing Collecto-Vac we have fewer ends down and have increased our production. Our yarn is of better quality; slubs and gouts are minimized. Production costs are lower. In addition, Collecto-Vac picks up considerable flying lint, keeping both frames and rooms cleaner."

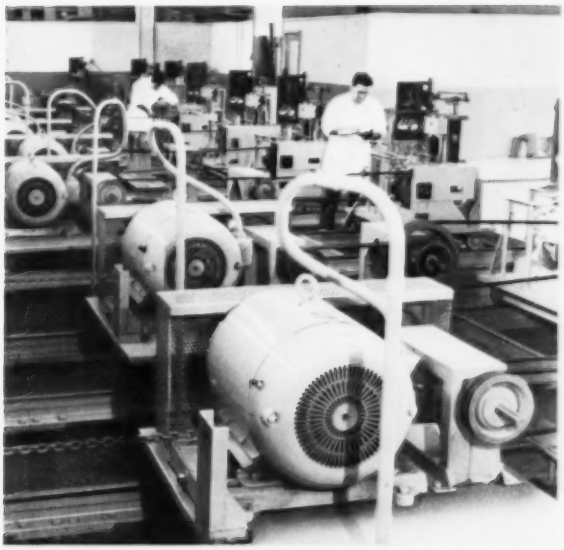
Let a Bahnson representative show you how Collecto-Vac can give you extra value. Write Bahnson today.

Bahnson
COMPANY
WINSTON-SALEM, N. C., U. S. A.

ONE SOURCE *for complete modernization equipment.*

← For more data, write this page number on Reader-Service card.

Why V-Belts with the Green Seal meet every test



Nearly one-third of all electric power used at the Goodyear V-Belt plant goes into testing, checking and development operations. These giant dynamometers, for example, test larger belts in all speed ranges and with various pulley diameters—with belt loads from zero to 100 h.p. The effects of reverse bending, various placements of idlers and high or low tension are also checked.

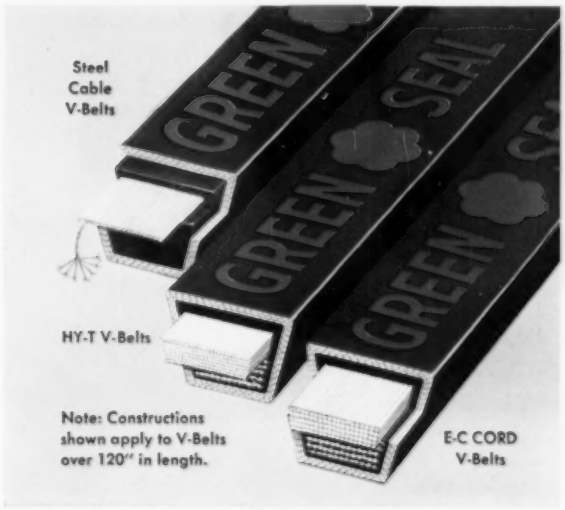
Dimensional stability! Belts are even test-run in closed, high-temperature ovens—to verify that their 3-T (Triple-Tempered) construction remains dimensionally stable under extreme operating conditions.

Perfectly matched sets! Belts are carefully measured on ultra-precision machines – then carefully coded to guard against "loafers" – or belts that overwork.

High strength, low stretch! Belts are subjected to "breaking point" tensile-strength tests in the Goodyear laboratories – to insure long, trouble-free service on your drives.

Maximum resistance to shock-loads! Belts are "tortured" on special machines that simulate the severest service – your protection against early belt failure.

Clean, smooth-running operation! Special nondusting rubber cover compounds are continually tested for friction balance – to give you freedom from sticking or grabbing in the grooves.



To pay off in –

Maximum trouble-free horsepower hours at minimum cost. That makes it a real gamble to settle for anything less than V-Belts with the Green Seal. See your Goodyear Distributor – or write Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.

DIMENSIONALLY STABLE V-BELTS with the GREEN SEAL by

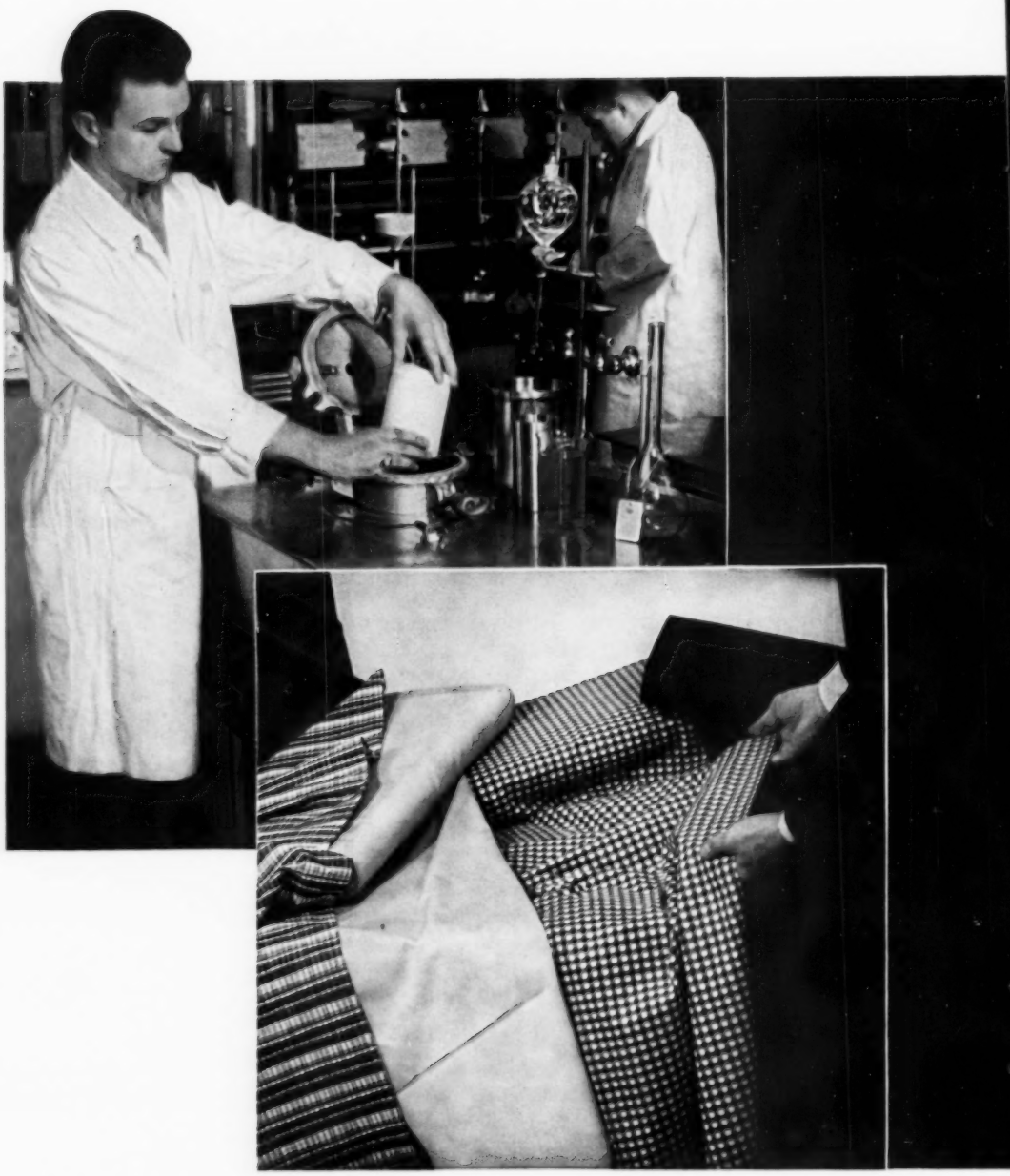
GOODYEAR

60th ANNIVERSARY

THE GREATEST NAME IN RUBBER

Green Seal, E-C Cord, Hy-T – T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Dyers know that National



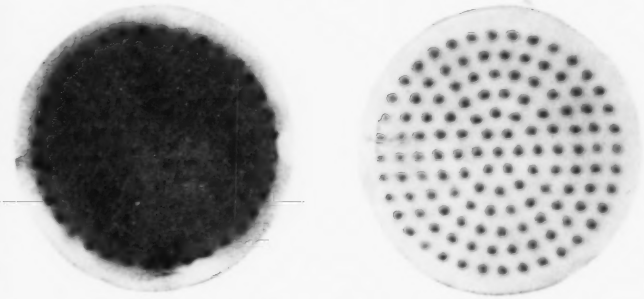
NATIONAL ANILINE DIVISION

ALLIED CHEMICAL CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

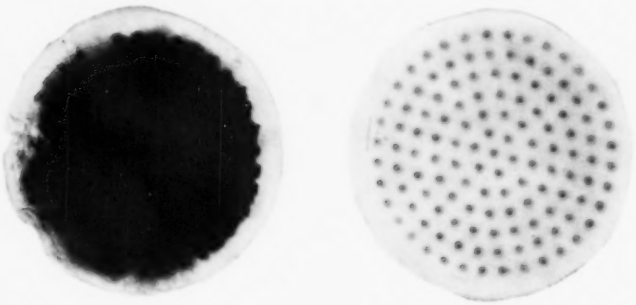
Akron Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence San Francisco Toronto

Carbanthrene® Vats are Cleaner !

these filter tests tell why!

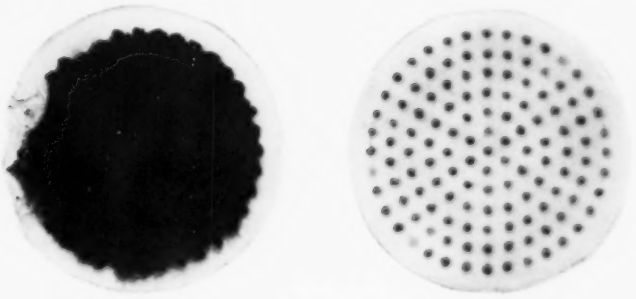


Dispersibility of Vat Dyes
as demonstrated by Buchner Funnel Filter Test



Ordinary unimproved vat dyes

Corresponding modern National Carbanthrene® Dyes



These Buchner funnel filter papers prove conclusively the outstanding superiority of modern National CARBANTHRENES over ordinary vat dyes.

Vastly improved dispersibility means cleaner, brighter dyeings every time. Level shades, free of speckiness, are obtained in padding. Thorough, even penetration of packages and beams reduces waste. Rejects and seconds due to dyestuff failures are minimized.

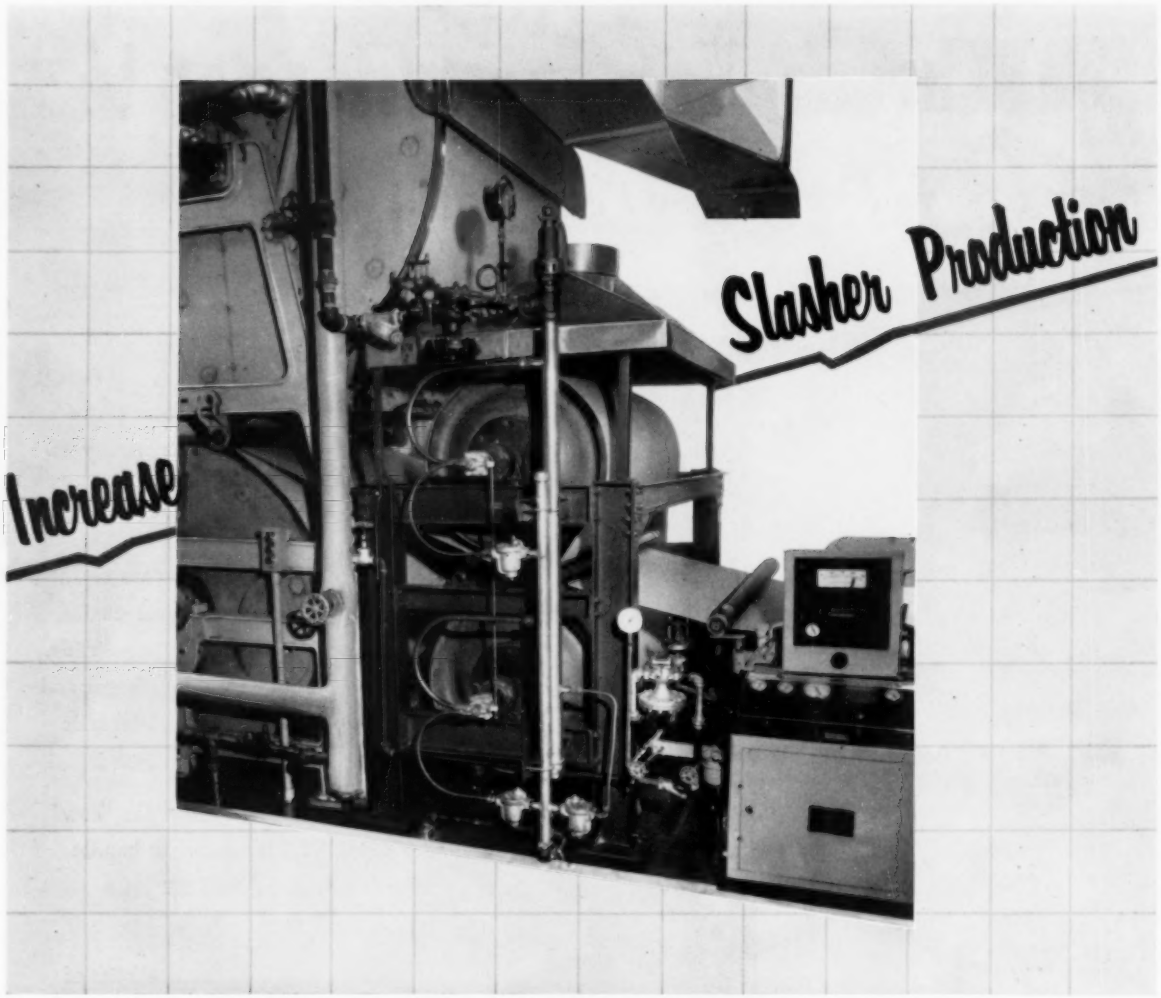
And in storage, as in processing, the "new" CARBANTHRENES are easier to handle due to the fact that they exhibit little tendency to agglomerate.

The ultra-refined physical characteristics of the superior CARBANTHRENE Vats result from unique manufacturing techniques that were developed at our Buffalo Research and Engineering Center. A complete range is available now to meet every requirement of pigment application.

For an eye-opening trial in your plant, request working samples today.

Allied Chemical

SLASH PRODUCTION COSTS . . .



with Textile Shops' Booster Dryer

Mills using TEXTILE SHOPS' Booster Dryers report increased production rates up to 60% or more after adding one of these units to existing Slashers. They are being successfully used with all types of Slashers—two-cylinder, three-cylinder, multi-cylinder and air dryers.

They can be quickly and inexpensively installed and occupy very little, if any, additional floor space.

A small investment now for a TEXTILE SHOPS' Slasher Booster which may be incorporated later into a multi-cylinder dryer will produce important savings through increased production.

May we discuss your Slasher Department problems and production requirements with you . . . without obligation, of course.

The Textile Shops

Spartanburg, S. C.

The South's Oldest and Largest
Drying Cylinder and Stainless Steel Fabricators

Man-made or natural staple...

. . . Uster Spectrograph is the heart of effective fiber control.

Faced with a shortage of high-quality natural fibers, some mills are successfully blending natural and man-made staple to produce top-quality yarn. 25% gain in yarn strength and 250% increase in abrasion resistance have been reported.

Uster Spectrogram tells the whole story of blend behavior. All variations are stored on 30 channels simultaneously with the operation of the Evenness Tester.

In 4 to 6 minutes the Spectrogram is automatically delivered for immediate and complete analysis.

SALES OFFICES

U. S. SALES OFFICES: ATLANTA, GEORGIA, NEEDHAM HEIGHTS, MASSACHUSETTS

CANADIAN SALES OFFICE: HUGH WILLIAMS & CO., 27 WELLINGTON ST., EAST TORONTO 1, ONTARIO

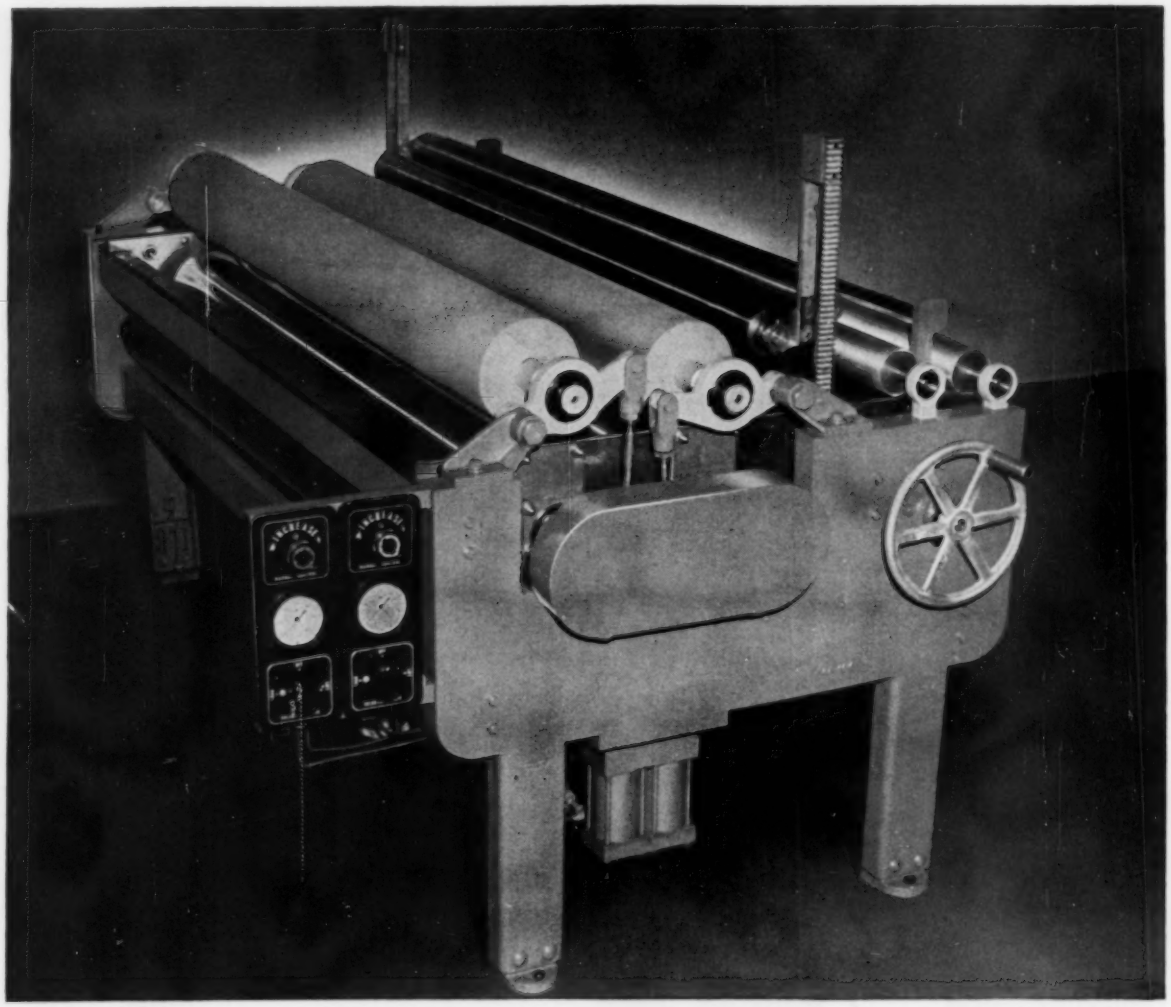
FOR THE USTER SPECTROGRAPH

USTER

USTER CORPORATION
CHARLOTTE, N. C.

For more data, write this page number on Reader-Service card. →

TRY THIS FOR SIZE



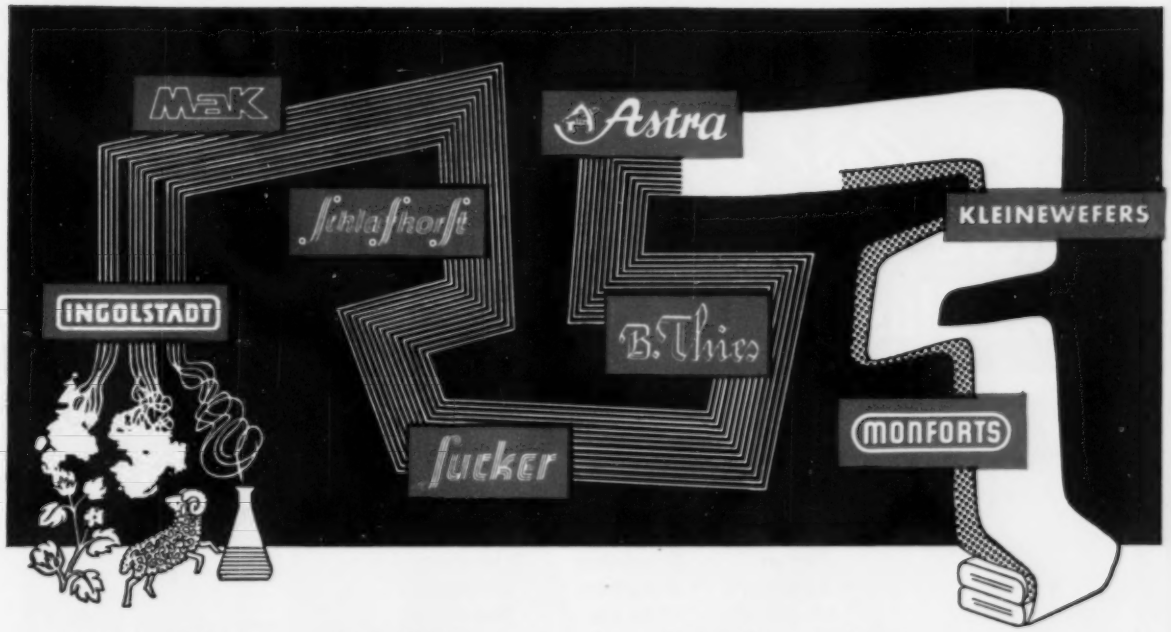
- **West Point Foundry's Model 572 Double-Squeeze Size Box** is successfully handling heavy warps of between 5,000 and 6,000 ends in one standard width box. Double immersion rolls, insulated vat, and rubber-covered pneumatically-loaded squeeze rolls are standard equipment.
- **Modern Uncluttered Design** makes for easier cleaning, neater appearance.
- **Rugged Construction** to withstand the pneumatic loading and high speeds of modern slashing: Improved stuffing boxes and heavier bearings on large diameter size roll journals.

Remember, you have a choice with West Point because West Point Foundry makes both
AIR-DRI® & MULTI-CYLINDER *Slashers*

WEST POINT Foundry & Machine Company

WEST POINT, GEORGIA

← For more data, write this page number on Reader-Service card.



From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
MAK Card Sets · Self-acting Mules · Ring spinning Frames
SCHLAFHORST Machines for winding-warping and sectional warping
SUCKER Sizing Machines · Size Mixing and Cooking Installations
THIES Dyeing and Bleaching Plants for yarns and card-slivers of all kind
ASTRA Weaving Machines for cotton-, wool- and special fabrics e. g. feltcloths · Jacquard-weaving Machines
KLEINEWEFERS Calenders · Mangles · Printing-, Mercerizing machines · Continuous Bleaching and Dyeing Plants
MONFORTS Finishing Machinery · Measuring, Inspecting, Plaiting, Rolling and Doubling Machines for all kinds of cloth

NET

UNIONMATEX TEXTILMASCHINEN-UNION GMBH, FRANKFURT/MAIN, NEUE MAINZER STR. 22
CABLE: UNIONMATEX · TELEX: 0412487 · TELEPHONE: 93168/93522

For more data, write this page number on Reader-Service card. →

Cost Conscious!
Here are some eye-openers on Slasher Operating Costs

Here are some actual carefully kept mill records — same mill — same styles. All equipment modern.

	Cocker 9 Cylinder Slasher	A leading American Hot Air Dryer	A leading Foreign Hot Air Dryer
Power Cost/M yds.	$ .066	$ .409	$ .415
Steam Cost/M yds.	.933	1.845	1.094
Total Cost/M yds.	$ .999	$2.254	$1.509
Cost Disadvantage	$ 0	$1.255	$ .510

WEAVE ROOM EFFICIENCY

The efficiency of Cocker beams in the weave room was slightly above that of hot air dryers.

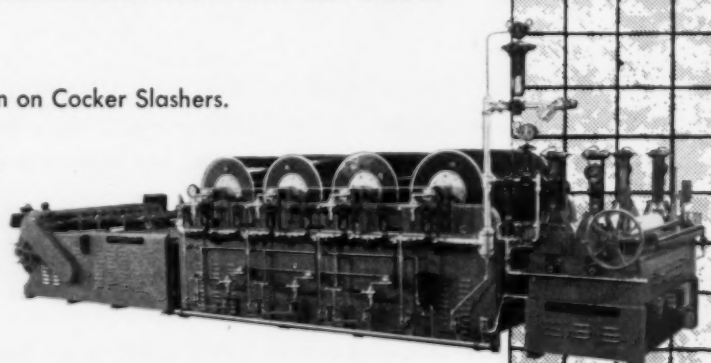
FINISHED CLOTH QUALITY

Cocker finished cloth quality was equal in all respects to that produced by any other slasher.

100 tooth ¾" pitch double sprocket and chain insure lowest maintenance expense.

Let us give you full information on Cocker Slashers.

In Canada and New England:
Contact W. S. Clark
Montreal, Canada
Melrose 1-3751



THE LEADER AROUND THE WORLD
COCKER
Machine and Foundry Co., Gastonia, N. C.

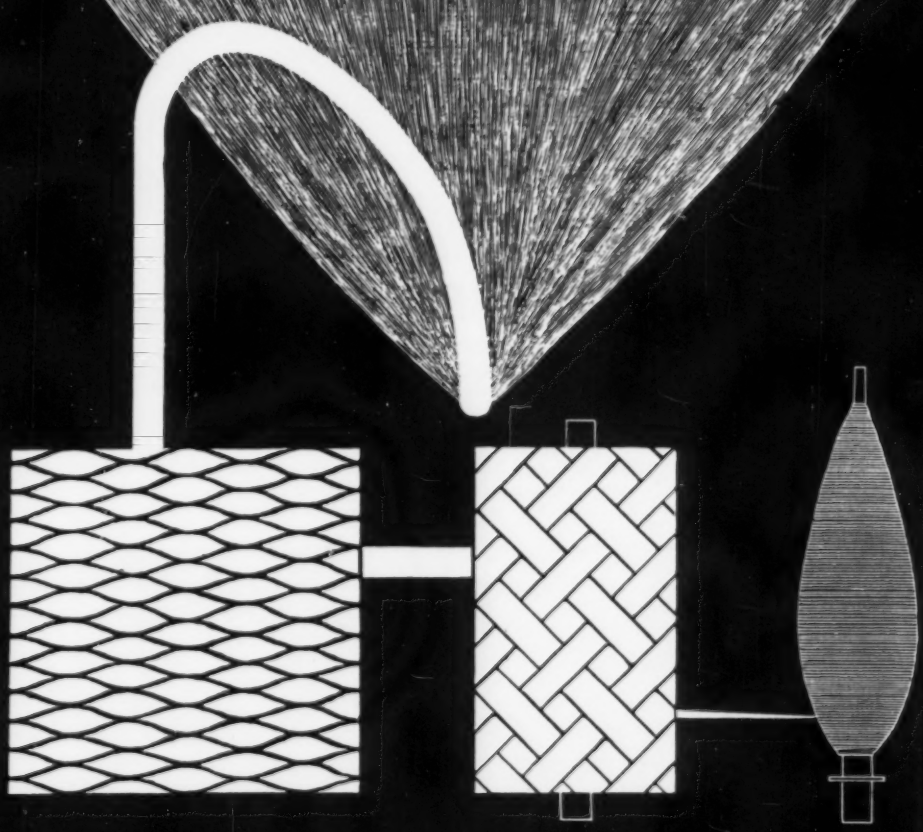
Plant and Offices at Ranlo, N. C. (Mailing address, Gastonia, N. C.)

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

← For more data, write this page number on Reader-Service card.

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT / Donau

INGOLSTADT



SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE · WORSTED

Planning and supply of complete spinning plants based

on latest experience in spinning technology and mechanical engineering

Spares for spinning machinery · Conversions of draft systems

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT / Donau

For more data, write this page number on Reader-Service card. →

SCHWEITER

1—individual drive

2—differential gearing for prevention of pattern wind

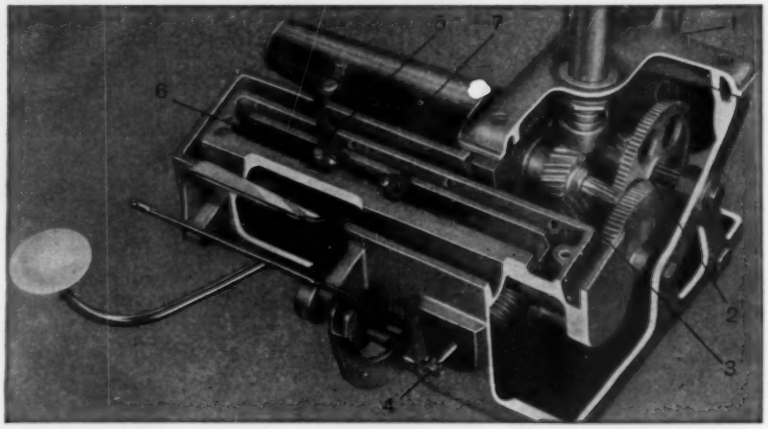
3—gear drive

4—positive drive for waxing device

5—thread guide

6—cam

7—driving drum



The VARIO-CONER Type KM

the new Special Cone Winder for cotton, wool, etc. for winding over-end from cops and spinning bobbins and for unrolling from swifts with automatic stop motion for entanglement in the skein

The VARIO-CONE

on cardboard cones of 9° 15′ conicity and 16° at fully wound diameter. Experts consider the VARIO-CONE to be the finest and best shaped cross wound package of its kind.

SCHWEITER LTD.

HORGEN (Zurich) Switzerland

Sales and Service in the United States and Canada H. J. THEILER Corporation

Whitinsville, Massachusetts

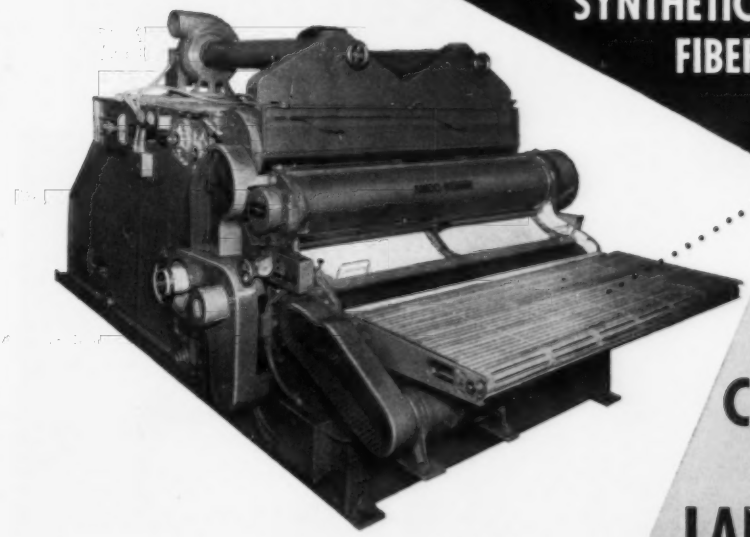
Spartanburg, South Carolina

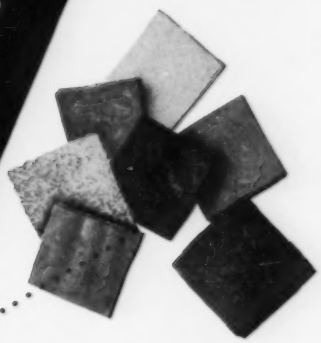
← For more data, write this page number on Reader-Service card.

FINE QUALITY RANDO-WEB®

Made economically without cross-lamination with square, even selvage

FROM ALL KINDS OF NATURAL OR SYNTHETIC FIBERS





without

CARDS, GARNETTS

or

LAPPING EQUIPMENT

RANDO-FEEDER® and RANDO-WEBBER®

THE WORLD'S LEADING MANUFACTURERS OF NONWOVENS HAVE INSTALLED, OR ARE INSTALLING THIS EQUIPMENT

WRITE for bulletin giving more detailed information on fibers used, webs made, end products . . . No obligation, of course.

TEXTILE DIVISION

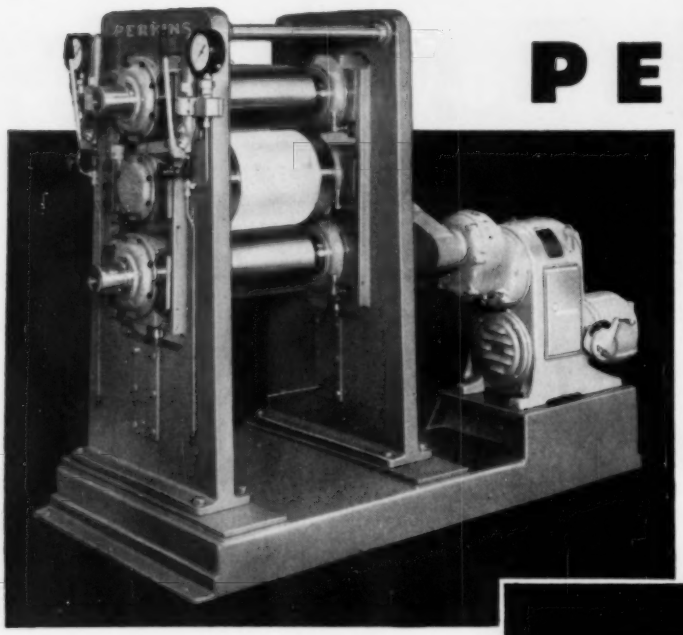
CURLATOR®

CORPORATION

EAST ROCHESTER, NEW YORK

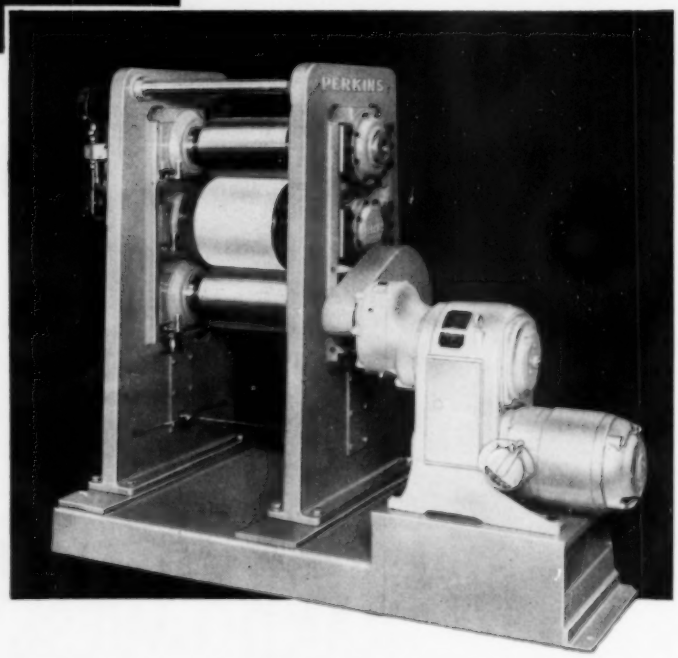
EXPORT REPRESENTATIVES:
Lendt & Company,
535 Fifth Ave., New York 17, N. Y.

SOUTHERN REPRESENTATIVE:
Parrott & Ballentine, 510 So. Carolina,
National Bank Bldg., Greenville, S. C.



PERKINS

Three-Roll Laboratory Calenders



NEW *Design*

★ ★ ★

ECONOMICAL AT SURPRISING LOW COST

★ ★ ★

Perkins announces this improved laboratory calender at a considerable saving in cost. With this equipment, you can do your experimental work, and finished production up to 24″ width. It will pay you to investigate this outstanding development.

B. F. PERKINS & SON, INC.
HOLYOKE, MASSACHUSETTS

← For more data, write this page number on Reader-Service card.

When you think of Brainard you automatically think of high quality steel strapping. Naturally, we are proud of this reputation . . . but Brainard is more than just strapping . . . it's a complete line of strapping, tools and accessories to solve any packaging problem. From the latest pneumatic tool to anchor plates and seals, if it's designed for simplified strapping Brainard has it.

Why not call your Brainard representative (we are in the yellow pages of all major cities). He will give you information on Brainard's complete line. He will be glad to demonstrate tools and in some cases supply a test coil of Brainard's top quality steel strapping.

2310

Brainard Steel Strapping

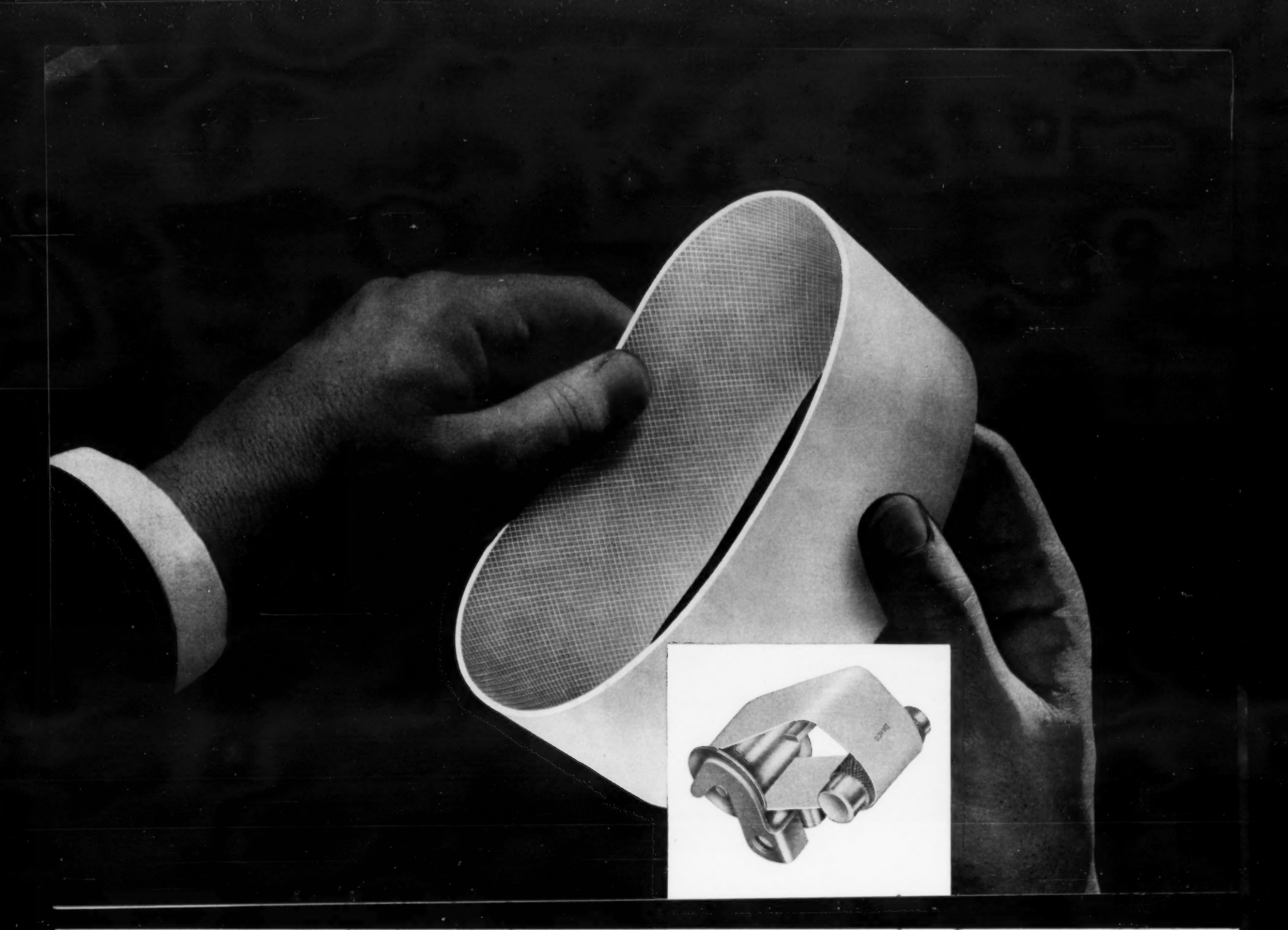
SHARONSTEEL

BRAINARD STEEL DIVISION OF **SHARON STEEL CORPORATION**

LARCHMONT AVE. • WARREN, OHIO

Charlotte Office	Atlanta Office	Dallas Office	Houston Office
1949 Freedom Drive	565 Western Ave., N. W.	1412 Jeffries St.	400 Wayside Dr.
Charlotte, N. C.	Atlanta, Georgia	Dallas, Texas	Houston 11, Texas

For more data, write this page number on Reader-Service card. →



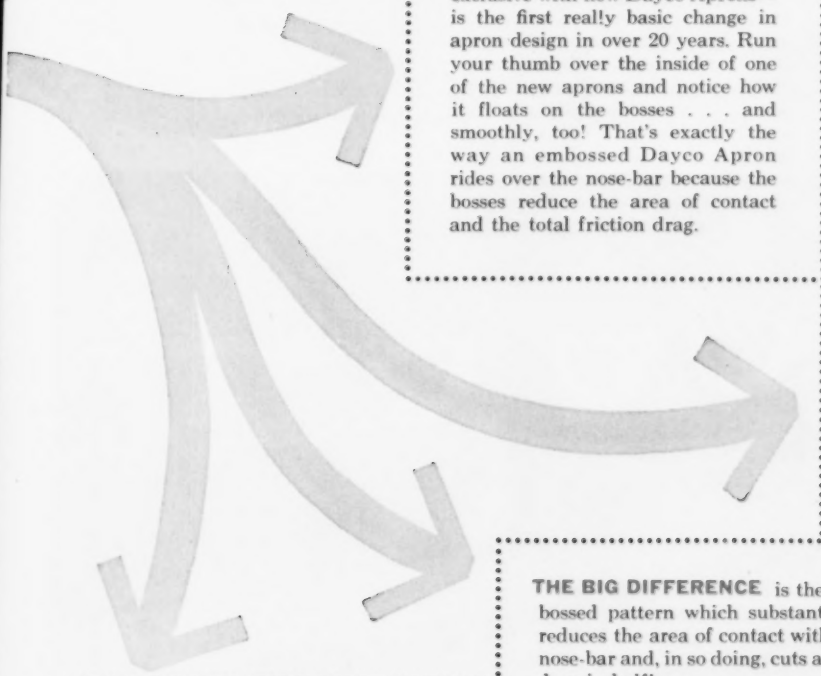
Exclusive Dayco Embossed Design

Cuts apron drag in half

On Systems not using fixed centers.

THE EMBOSSED inside surface—exclusive with new Dayco Aprons—is the first really basic change in apron design in over 20 years. Run your thumb over the inside of one of the new aprons and notice how it floats on the bosses . . . and smoothly, too! That's exactly the way an embossed Dayco Apron rides over the nose-bar because the bosses reduce the area of contact and the total friction drag.

First Basically New Design in 20 years



HERE'S WHAT the laboratory reports on the new embossed Dayco Apron . . . "lowest coefficient of friction" . . . "less friction drag than any other apron ever tested" . . . "50% less waste collecting at the nose-bar" . . . "no evidence of chatter or of a tuck forming ahead of the nose-bar."

THE BIG DIFFERENCE is the embossed pattern which substantially reduces the area of contact with the nose-bar and, in so doing, cuts apron drag in half!

While this is the most advanced apron design on the market, Dayco Aprons with exclusive embossed design, are yours at absolutely no extra cost. And, you can order now if you're presently using a size B-60 apron or larger.

NEW IN BASIC CONCEPT and design, Dayco Aprons retain the mill-tested features that have marked Dayco Aprons as the finest available. . . . the pliant, non-stretch cord body . . . the lint-free outer surface. Thus you have the same long wearing, non-glaze surface that's unaffected by extremes of heat and humidity or by oils found in staple fibers.

Equip your frames with the revolutionary new Dayco Aprons, with exclusive embossed design, in sizes B-60 or larger . . . for complete details, write The Dayton Rubber Co., Textile Division, 401 S. C. National Bank Building, Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

OVERSEAS PLANT, THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

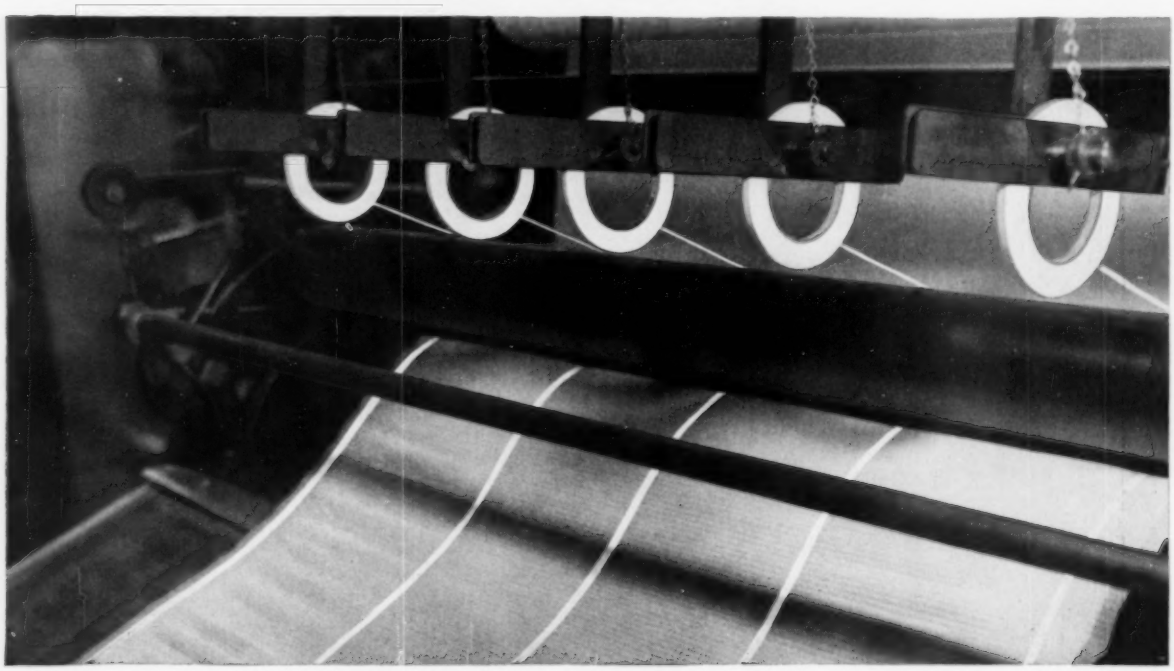
This "SCOTCH" Brand Tape helps put in the pleats!

Faster pleating at less cost with this "SCOTCH" Brand Pressure-Sensitive Tape! Paper backing and pressure-sensitive adhesive of tape hold the pleats during the entire curing cycle. And the tape strips off clean—leaves no adhesive residue.

This "SCOTCH" Brand tape is only one of the many "SCOTCH" Brand tapes designed for the textile and apparel industries. There are tapes that stick on both sides—for starting cloth on high-speed winder shells, tapes in colors—for identifying roving cans, tapes to do jobs you'd never dream tapes could do.

Together, these "SCOTCH" Brand tapes make up the world's most complete line of pressure-sensitive tapes for textile mill use. That's why you get the *right* tape for your need when you specify "SCOTCH" Brand.

You get the right tape-dispensing machine for your particular need from our sales engineers, too. Write 3M, Dept., PZ-68, St. Paul 6, Minn. for free manual.



When tape costs so little, why take less than

REG. U.S. PAT. OFF.
SCOTCH BRAND

Tapes for the textile and apparel industries

MINNESOTA MINING AND MANUFACTURING COMPANY

...WHERE RESEARCH IS THE KEY TO TOMORROW

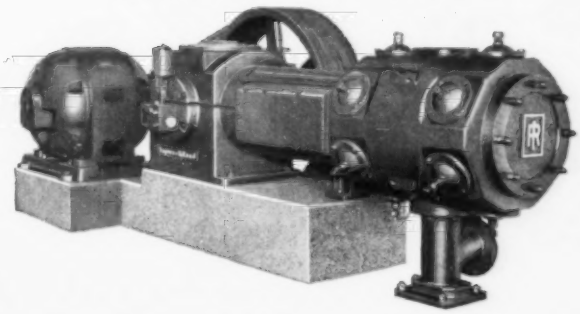
3M COMPANY

← For more data, write this page number on Reader-Service card.

NEW COMPRESSORS

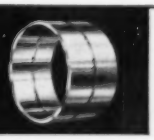
...with heavy-duty features proven in larger Ingersoll-Rand compressors

ESH* (horizontal)



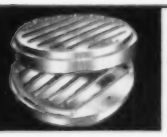
ESV* (vertical)

*The same compressor in either horizontal or vertical arrangement – 20 to 150 hp sizes, single-and multi-stage, pressures up to 5000 psi and vacuums.



Full-floating aluminum bearings never need adjustment

The full-floating bearings "roll with the punch," taking each thrust on a different portion of the shell. They are foolproof, and never require fitting or adjustment. Main and crankpin bearings are made of I-R's special aluminum bearing alloy, which has higher load capacity and better heat conductivity than other bearing materials.



Air-cushioned Channel Valves give unmatched performance

Known the world over for lasting efficiency, dependability and quiet operation, Ingersoll-Rand air-cushioned Type A Channel Valves are entirely different in design and principle from any other valves in use. Type A Channel Valves were developed especially for modern compressor speeds, and feature a separate stainless-steel seat plate which can be reversed or replaced for new life.

Never a need for adjustments– frame is kept sealed!

Here's an entirely new line of compressors, built to run longer — much longer. They're more compact, more efficient, and require less attendance, less maintenance. They offer greater capacity in less space, and are ruggedly built and highly refined to take years of continuous hard service.

All running parts are precision-machined and need no fitting or adjusting, so the frame is sealed — dirt stays out, and the major causes of wear are eliminated!

There are many design features—including filtered force-feed lubrication and full-floating self-adjusting metallic packing — that have heretofore been found only in larger Ingersoll-Rand compressors. Let your I-R representative tell you more about these new compressors, and how they can save you money.

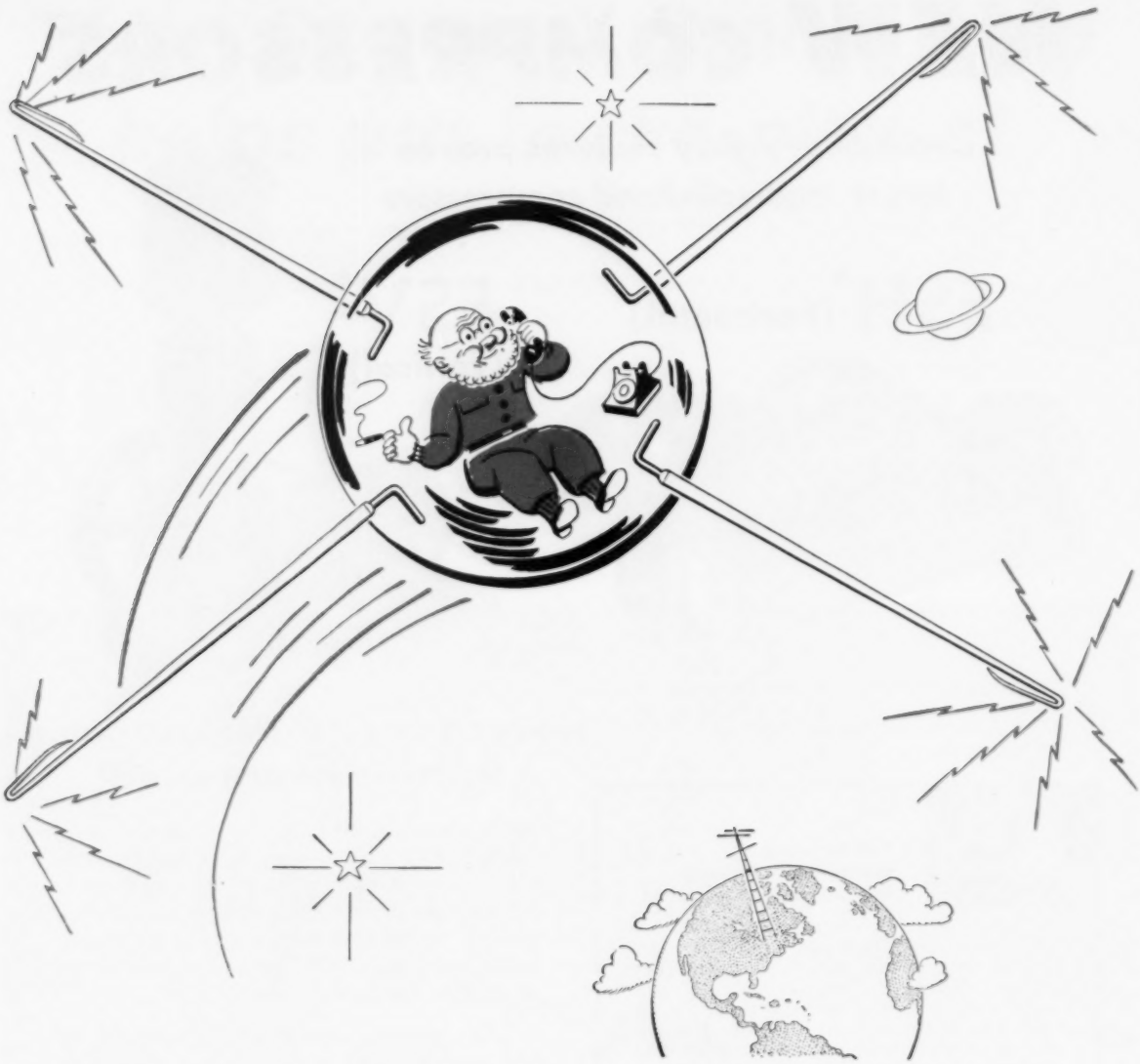
Ingersoll-Rand

I-9TS 11 Broadway, New York 4, N. Y.

In engineered products, there's no substitute for experience!

COMPRESSORS • GAS & DIESEL ENGINES • PUMPS • AIR & ELECTRIC TOOLS • CONDENSERS • VACUUM EQUIPMENT • ROCK DRILLS

For more data, write this page number on Reader-Service card. →



First things first!

The performance of your knitting machines depends on the quality of the needles. With Textile Spring-Beard Needles, you get the ideal combination of strength and resiliency for superior knitting results. With the most exacting controls, Textile gives you absolute dimensional uniformity — in stem, side, back, and beard.

You'll see the difference in Textile Needles, Flat Stock, and Leaded Assemblies.

Wire Products Division
TEXTILE MACHINE WORKS • READING • PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
Builders of Textile Machinery Since 1900

Textile SPRING-BEARD NEEDLES

The "Reading" CK-A Circular Knitting Machine • The "Reading" Tricot Machine • The "Reading 100" Full-Fashioned Knitting Machine
The "Reading" Full-Fashioned Outerwear Machine • The "Reading" Braiding Machine • Textile Spring-Beard Needles • Arrow Latch Needles

← For more data, write this page number on Reader-Service card.

Another Step Forward

This month we take our third big step in "modernizing" TEXTILE WORLD to make it better meet the needs of key textile men in these crucial and rapidly changing textile times.

On page 123 this month appears for the first time a two-page yellow section called "Fibers, Yarns, and Fabrics." This section is a companion piece of the sections called "Textile Business" and "Textile Chemicals," both started some months ago and both highly successful with TEXTILE WORLD readers.

These are big changes in textile-magazine publishing, and it is no more than logical that readers should ask why they are made.

The answer is simple: readers asked for them. Changing times in the textile industry, bringing new pressures and making new demands on the men who run mills, create a need for better, faster, more-up-to-date information in critical areas of decision-making.

Textile Business, Textile Chemicals, and now Fibers, Yarns, and Fabrics meet this need that every management man and every supervisor has.

Fibers, Yarn, Fabrics— One Key to Profits

The decade of the 1950's probably will go down in the history of the textile industry and of most textile companies as the decade in which new fibers, yarns, and fabrics were one of the most critical factors of all in mill profits.

Although there are a great many mills still running the same staple yarns and fabrics they have always run, every year there are fewer and fewer mills that have not found it necessary to change to another fiber, to blends, or to new fabrics.

Almost revolutionary changes of fibers and yarns have occurred in tire cord, carpet-making, all branches of knitting, automotive fabrics, and most garment fabrics. Even cotton ducks have felt pressure from other fibers, and rayon is now assaulting the print-cloth field.

In the final analysis, a mill has a very clear-cut course to follow:

1. Manufacture yarns and fabrics that will sell.
2. Select fiber or blends of fiber that will do a good job at the least over-all cost.
3. Control manufacturing and selling costs to net a profit.

Alertness Is Vital

This course is clear-cut and elementary, but it is much easier said than done.

One thing is absolutely vital: you cannot afford to go to sleep at the switch. No key man in the organization, from the president to the section man, can afford not to know what is going on around him, among his competitors, and in the industry.

Textiles is probably the fastest-moving business there is. In the mill, in the market, among consumers there is always a pressing demand for newness—different yarns and fabrics, better ways of doing things, better decision-making, better management, better supervision.

These demands are met only by alert, well-informed, industrious men and companies. They are never met by sluggards who are interested only in a paycheck, quitting time, and vacation.

To help meet these demands of alertness, being well-informed, and having a better understanding for making decisions in and out of the mill is the purpose of Textile Business, Textile Chemicals, and now Fibers, Yarns, and Fabrics.

O. M. Thomas

FALL

SWEATER PARADE

featuring Turbo High-Bulk Orlon

Look at the fall knitwear lines — and see how Turbo High-Bulk Orlon* is leading the fashion parade in classic full-fashioned, tow-dyed, heathers and bulky knits — in fact the full sweater range for men, women and children.

For the Turbo Stapler delivers yarns tailored to knitters' specifications — denier can be altered, tensile strength increased, staple length controlled, and any desired hand achieved.

That's why so many spinners, who started with one Turbo Stapler, are now equipped with two, three or four Staplers . . . and they are planning ahead for increased production of the softest, loftiest yarn it is possible to spin.

For mills that are planning ahead with new synthetics or new fiber effects, Turbo offers its facilities for experimental work. Talk to a Turbo engineer.

*DuPont T.M. for its acrylic fiber

TURBO
SINCE 1929

TURBO MACHINE COMPANY

Makers of precision Heat and Steam Setting Machines, Crimpers and Tow Processing Equipment

LANSDALE, PA.

Southern Representative: Parrott & Ballentine, Greenville, S. C.

The TURBO STAPLER
The TURBO FIBER SETTER

← For more data, write this page number on Reader-Service card.

Textile World's

COTTON-FIBER TABLE

1958 Revision

What's Happening to COTTON?

- Cotton has undergone many changes since publication of TEXTILE WORLD's 1953 Cotton-Fiber Table. Only four of the varieties or strains described in 1953 are still of commercial importance. Seven improved cottons have come into the picture and are described in these pages. A number of others show promise.
- Methods of marketing, selecting, and testing cotton also are being improved. For example, high-density bales and new bale coverings are undergoing extensive testing, and the results look promising.
- During the last two years, the Dept. of Agriculture greatly broadened its fiber-property and manufacturing-performance testing program. New methods of determining and reporting fineness, maturity, strength, and sugar content went into effect in 1956. At the same time, reports were begun on the chemical processing performance of the different varieties.
- In all of these activities, the end result sought is better quality-plus-price textiles for the consumer.
- Some of the things that are happening to cotton are shown in these pages. Among the subjects discussed are —
  - How the use of cotton is holding its own
  - Properties of cotton used in 32 basic textiles
  - What's happening to cotton varieties

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

How You Can Use the New

What's Happening to
COTTON VARIETIES

Since 1951 – • **Eight cottons have disappeared** • **Old varieties have been improved** • **Seven new varieties or strains have become com**

Figures taken from or based on U. S. Dept. of Agriculture *Cotton Varieties Planted, 1953-57.*

Since publication of the second "TEXTILE WORLD's Cotton Fiber Table" in January, 1953, many important changes in cotton varieties have taken place.

Of the 12 varieties or strains described in the 1953 chart, all but four have practically disappeared. The cottons that lost out were Deltapine 14, Stoneville 2B, Hibred, Rowden, Mesilla Valley, Macha, Acala 1517, and Pima 32.

Commercially important newcomers, whose characteristics are presented on the back of these pages, include Stoneville 7, Arizona 44, Lankart 57, Delfos 9169, Northern Star, Acala 1517C, and Pima S-1. Other recently developed cottons that show promise are Coker 124, Stardel, DPL Fox, Parrott, and Paymaster.

Important New Cottons

– **Acala** strains accounted for 21% of the total cotton acreage planted in 1957, compared with 17% in 1956. These cottons, developed from Acala 1517, represented 97% of the cotton planted in California, 93% in Arizona, 80% in New Mexico, and 85% in District 6 of Texas.

– **Pima S-1,** successor to Pima 32, accounted for almost the entire acreage of American-Egyptian cotton planted. Production of extra-long-staple cotton increased from 41,000 bales in 1954 to 49,000 bales in 1956. The 1957-58 production is estimated at 85,000 bales.

– **Northern Star**, a short-staple variety, also is becoming important in the Texas-Oklahoma area, where it accounted for 7% of the 1957 acreage planted in that district and 2% of the total acreage.

– **Stoneville 7** has almost entirely replaced Stoneville 2B. But all Stoneville strains planted in 1957 represent only 3% of the total acreage, compared with 7% in 1950.

– **Arizona 44,** first called Acala 44 and later A44, shows considerable promise in the Far West, although acreage planted is still small. This cotton has a medium-length staple ranging from 1 1/32 ro 1 3/32 ins.

– **Delfos 9169**, with an average staple length of 1 in. and a grade of almost 103, is grown in the Southwest. In 1957, it accounted for 4% of the total U. S. acreage.

– **Lankart 57**, another newcomer, represented 9% of the total U. S. acreage in 1957 and 32% of the acreage in the Texas-Oklahoma district. Although a relatively short-staple cotton, with an average staple length of about 30/32 in., Lankart's percentage of total acreage has increased rapidly since 1952.

Four Varieties – 75% of the Crop

Four general varieties accounted for nearly 75% of the total cotton acreage planted in the United States in 1957. These cottons were Deltapine, Acala, Coker, and Lankart, named in order of their relative importance.

The percentage of acreage planted to these cottons can be seen from the accompanying table covering the years 1953-57.

As indicated by the table, almost as much Deltapine cotton is planted as any other two varieties combined. However, Acala is closing the gap. In 1950, Acala acreage amounted to

U. S. Cotton Acreage Planted to Specified Varieties, 1953-5

Year	Acala	Coker 100-W	Delfos	Deltapine	Empire	Fox	Lankart	Northern Star	Stone
1953	21%	15%	1%	31%	4%	2%	3%	1%	4
1954	19	13	1	31	4	3	6	3	4
1955	21	12	2	31	4	2	7	3	3
1956	17	13	4	34	5	2	10	3	3
1957	21	12	4	31	5	2	9	2	3

S

been improved

become commercially important

of the
eplaced
planted
creage,
44 and
in the
is still
staple
staple
103, is
counted
resent-
57 and
ma dis-
cotton,
30/32
ge has
nearly
in the
s were
named
these
anying
much
er two
closing
ted to

5.4% of the total; in 1957 it was 21% of the total, compared with 31% for Deltapine.

Coker continues as the leading variety in the Southeast, Deltapine predominates in the Mid-South, Lankart leads in the Southwest, and Acala is almost the only cotton planted in the Far West.

Where the Varieties Are Grown

Since a large percentage of the cotton used by U. S. mills is bought by variety and area of growth, mill men should know where certain varieties are grown.

In the important cotton-producing states, the predominant varieties and the percentage of the acreage planted to them in 1957 were:

State	Variety	Percent
Alabama	Coker	34
	Deltapine	24
	Empire	21
Arizona	Acala	93
Arkansas	Delfos	20
	Deltapine	66
California	Acala	97
Georgia	Coker	53
	Empire	30
Louisiana	Deltapine	90
Mississippi	Deltapine	76
New Mexico	Acala	80
North Carolina	Coker	99
Oklahoma	Lankart	41
	Northern Star	14
South Carolina	Coker	98
Tennessee	Deltapine	63
	Empire	19
Texas	Deltapine	16
	Lankart	31

ieties, 1953-57

Northern Star	Stoneville	Others	Total
1%	4%	15%	100%
3	4	17	100
3	3	17	100
3	3	9	100
2	3	11	100

USE OF C

- Mill consumption has stayed
- Per-capita consumption has dropped steadily

Figures taken from or based on figures that appeared in the U. S. Dept. of Commerce publications *Statistical Abstract of the United States – 1956*, and *Facts for Industry – Feb. 7, 1958*, and in the U. S. Dept. of Agriculture publications *The Cotton Situation – Nov. 1957*, *Statistics on Cotton and Related Data – 1920-56*, and *The Outlook for Cotton*

Production o

Broad woven cotton goods
Duck and allied fabrics
Sheeting and allied coarse
and medium-yarn fabrics
Print-cloth-yarn fabrics
Colored-yarn fabrics
Towels, toweling, and dis
Napped fabrics, blankets,
blanketing
Fine cotton fabrics
Other woven cotton fabric
and specialties

The spectacular growth in the use of man-made fibers has caused many people to lose sight of the fact that about 70% more cotton was used by U. S. mills in 1956 than in 1930.

Comparisons are usually given in percentages of total fiber consumption. Such figures, while valid, overemphasize the increase in the use of man-made fibers because they start from the zero point.

The objection to the use of percentage of consumption figures is that they make it appear that the fibers that do not start at the zero point are losing ground.

For example, in 1930 cotton represented 85% of the total fiber used in the United States. In 1956, that figure was down to 67%. However, total consumption of all fiber increased so much between 1930 and 1956 that the consumption of cotton increased from 2.6-billion pounds to 4.4-billion pounds – better than 70%.

For the two 10-year periods from 1930 to 1950 and the period from 1951 to 1956, cotton consumption averaged:

1931–40	3.1 (billion lbs.)
1941–50	4.8
1951–56	4.4

The 4.4-billion-lb. average of the last five years is particularly significant when it is taken into consideration that the previous period embraced World War II requirements.

Per-Capita Use Is Down

The amount of cotton fiber used per person remained remarkably constant from 1945 to 1951, but it has been going down slowly since 1951. Cotton consumption per person for 1957 is estimated at 24 lbs. per person, 2 lbs. less than was used in 1956 and 7 lbs. less than in 1951.

Consumption of cotton per person dropped 9% from 1955 to 1957; but not generally known is that the consumption of man-made fiber also went down about the same amount. So cotton's relative share of the fiber market was as large in 1957 as it was in 1955.

Part of the trend toward less total fiber consumption per person during the postwar period was caused by the fact that it takes more than 1 lb. of cotton to replace 1 lb. of man-made fiber. This situation is particularly true of the noncellulosic man-made fibers.

Where Cotton Is Used

Having an ever-widening range of man-made fibers available is forcing mills to select fibers better adapted for end products. Just as years ago wool proved best for such products as outerwear and carpets and cotton was best for shirts and summer dresses, certain man-made fibers and oth materials are now proving better than cotton f certain products.

For example, nylon has long since replace silk as the major fiber used in women's hosier rayon and nylon have practically taken over th tire-cord market; man-made fibers of various kin are cutting into the lucrative rug and carpet marke and most bags are now made of paper. Awning formerly made mostly of cotton duck, are now bei made of metal, wood, and man-made fibers.

On the other hand, cotton is holding its own gaining in some uses, such as in the manufactu of duck and allied fabrics, print cloth, sheetin toweling, and fine dress fabrics.

The production of broad woven cotton goods 1956 totaled 10.3-million yds., 1% above the 19 level and 4% above the 1954 output. The 1956 pr duction of sheeting and allied coarse- and mediu yarn fabrics was 4% higher than in 1955 and 8 above 1954. Fine-fabric output in 1956 was 9 higher than in 1955 and 21% above 1954.

The production of other major cotton fabrics 1956 showed changes ranging from minus 12% f colored-yarn fabrics to plus 12% for towels, towe ing, and dishcloths.

The accompanying table shows the five-ye trend in production of broad woven cotton fabric Preliminary figures for 1957 indicate that some the 1956 gains were wiped out by bad busines conditions.

The Tire-Cord Story – Continued

As to specific losses of markets for cotton, t tire-cord and chafer-fabric story probably is t most extreme example. As shown in the 19

COTTON *Is Holding Its Own*

ved on an even keel since 1945 • **U. S. consumption is up 70% since 1930**

dily since 1951 • **Future consumption depends on price and properties of man-made fibers**

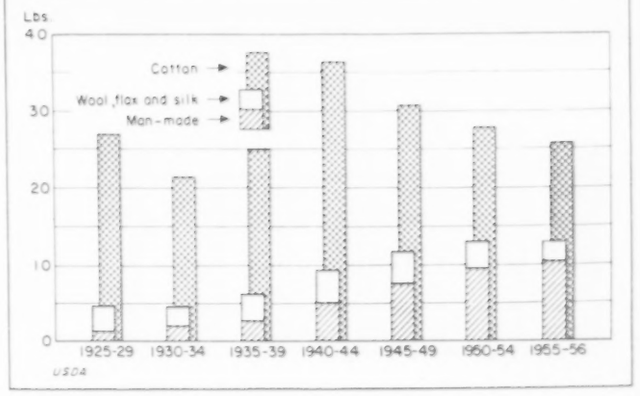
on of Broad Woven Cotton Fabrics

	1956	1955	1954	1953	1952
	(Millions of linear yards)				
oods (total)	10,317	10,174	9,890	10,203	9,514
s	255	242	239	263	366
barse-					
brics	2,691	2,586	2,493	2,556	2,416
s	3,888	3,967	4,039	3,956	3,638
	617	698	738	862	827
l dishcloths	562	502	455	475	428
ets, and					
	240	240	233	290	297
	1,508	1,379	1,244	1,307	1,112
brics					
	553	557	447	490	427

U. S. Mill Consumption of Cotton

Year	Million lbs.
1930	2,616.6
1935	2,755.4
1940	3,959.1
1945	4,515.8
1950	4,682.7
1951	4,868.6
1952	4,470.9
1953	4,456.1
1954	4,127.3
1955	4,382.4
1956	4,369.3

U. S. Fiber Consumption Per Person



other
n for

laced
siery;
r the
kinds
rket,
ings,
being

wn or
cture
eting,

ds in
1955
6 pro-
dium-
d 8%
s 9%

cs in
% for
owel-

-year
brics.
ne of
ness

n, the
s the
1953

Cotton-Fiber Table, cotton was still an important fiber in this field as late as 1950. The following figures show what has happened since that date:

Production of Tire Cord and Chafer Fabric

	Cotton	Rayon and nylon
1950	226.0 (million lbs.)	296.9 (million lbs.)
1951	–	–
1952	139.0	383.8
1953	73.2	428.9
1954	59.8	324.1
1955	67.1	406.8

A further indication of the rapid changes in tire-cord technology is that the use of nylon increased from 8-million lbs. in 1952 to nearly 50-million lbs. in 1955 at the expense of rayon and cotton.

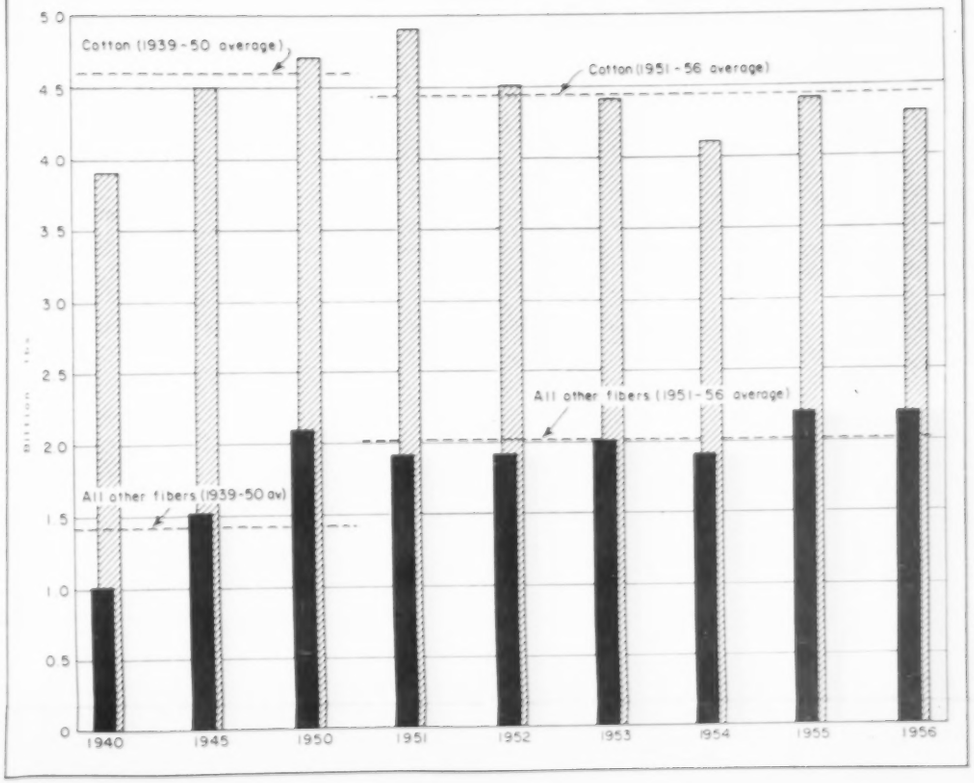
What About the Future?

The quality-plus-price factor determines what fiber will be used for any given product. It is likely that for many years to come the price advantage will favor most man-made fibers over cotton because of the high cost of cotton production, artificial price supports, and curtailed acreage.

However, cotton still has many physical-property advantages over man-made fibers for certain uses, and these properties are being improved from year to year by breeders.

If the price of cotton can be maintained at a level low enough to compete favorably with man-made fibers, the chances are that the per-capita consumption of cotton will turn up again because of its desirable properties and intensive promotion by textile manufacturers.

U. S. Mill Consumption of Fiber (Cotton vs. All Others)



How You Can Use the New
COTTON-FIBER TABLE

The Cotton-Fiber Table of 1958 is almost a complete revision of the 1946 and 1953 tables. The reasons are that only four of the cottons described in 1953 are still commercially important and the testing program has been changed in many instances.

Results for fiber and spinning tests are reported in essentially the same manner as for previous crops except as follows:

1. Values for fiber fineness and maturity in combination, measured on untreated samples in terms of Micronaire readings, are reported in addition to values for fiber fineness and maturity determined separately by means of the Causticaire technique.
2. Fiber-strength values are reported in grams per Tex number at zero-gauge spacing in addition to the other two strength values.
3. Results of color measurements are reported for raw cotton rather than for lint cleaned by the Shirley analyzer.
4. Acid-alkaline values in terms of pH units were reported for the first time in 1956. These values indicate the possibility of fiber deterioration caused by microorganisms.
5. Moisture regain at 92% r.h. was reported for the first time in 1956.
6. Color and luster measurements that indicate bleaching, dyeing, and mercerizing performance are now reported.

Range of Test Results Given

The purpose of the table is to give a quick picture of the leading varieties of cotton. A range of values is given for each fiber-property and manufacturing-performance test, the range in each case being the high and low test result on a given variety for that year. Averages for 1956 and 1957 also are shown.

For example, the range in grade for Coker 100-W grown in the Southeast region in 1956 is LM to SM and the staple-length range is 1 to 1 1/16 ins. This tabulation means that LM was the lowest grade of Southeastern Coker 100-W and that SM was the highest. Likewise, the shortest staple was 1 in. and the longest was 1 1/16 in.

In the Mid-South, Coker's grade was an even SLM and the staple length ranged from 1 1/32 to 1 1/16 ins.

A mill might reasonably expect its cotton to fall within the ranges given. By far the major portion will, but some won't. An absolute range could not be obtained without testing every bale grown.

The averages for each fiber property tested have been reported by USDA since 1956. This additional factor should make it even easier for mills to anticipate the manufacturing performance of their cotton.

For example, the average grade of Coker 100-W for 1956 in the Southeast and Mid-South was 96.6 (Middling = 100) and the average staple length was 33.2 (32nd in.). It should be taken into consideration, however, that the averages may take in more than one region of growth as in this instance; and where there is more than one region of growth, the range may give a more accurate picture than the average.

Effect of Area and Season

The area of growth is one of the most important factors outside the cotton itself that affects the quality of cotton. For example, Deltapine 15 grown in the Southeast is a more-uniform cotton than Deltapine 15 grown in the Mid-South.

Take the staple-length range for the normal growing years of 1955 and 1956. It was:

	Southeast	Mid-South
1955	1 1/32 to 1 1/16	15/16 to 1 3/32
1956	1 1/16	31/32 to 1 3/32

From low to high, the range covered, in 32nd in.:

Southeast 1, 0 (average 0.5)
Mid-South 5, 3 (average 4)

The fiber-maturity range was:

	Southeast	Mid-South
1955	73 to 78	71 to 83
1956	73 to 78	73 to 83

From low to high, the range covered in percent of mature fibers was:

Southeast 5, 5 (average 5)
Mid-South 12, 10 (average 11)

The effect of season on cotton quality may be analyzed from the test data in the table.

Again take Deltapine grown in the Mid-South as an example.

An analysis shows that much of the cotton, especially in the Delta area, was damaged by unseasonable rains. Qualities hit hardest were strength and grade.

In 1957 the average skein break for 22s gray yarn was 38 lbs., compared with 40 lbs. for 1956 cotton from the same area. Fiber tensile strength dropped from 83,000 psi. in 1956 to 78,000 psi. in 1957. Average grade index was 93.7 in 1957, compared with 97.6 the previous season.

Staple length, which is determined largely by weather conditions during the boll-development period, was not affected greatly in 1957 because the unseasonable rains came after the staple was developed.

The sugar content and acid-alkaline values indicate fiber deterioration in the 1957 crop, since pH values above 8.0 when associated with low sugar content generally mean damaged fibers.

Spinners, taking these and other factors into consideration, would do well to (1) select early picked Deltapine cotton, (2) avoid colored cotton, and (3) increase staple length normally used by 1/32 in. Otherwise, yarn breaking strength will be low.

If You Have a Testing Program —

Mills that have a cotton-fiber testing program under way can use this Cotton-Fiber Table to see how its cotton fits into the over-all cotton-quality picture.

If results of mill-laboratory tests vary considerably more than the ranges given here, someone should investigate cotton-buying practices.

If the cotton, bought by variety or area of growth, is not good enough or is too good for the quality of fabrics you make, this table can serve as a guide in locating a more suitable cotton.

Mills that have not gone into a fiber-testing program should find the table a valuable reference.

1956	17	13	4	34	5	2	10	3	3
1957	21	12	4	31	5	2	9	2	3

What Cottons Are Used in 32 BAS

From data supplied by the Agricultural Marketing Service, USDA

Regardless of the product, all mills do not use the same qualities of cotton to make that product. Such differences as the cloth quality the mill wants, processing equipment used, how effectively the equipment is used, the manufacturing organization, and labor and cotton costs determine what cottons are used.

If a mill has particularly good machinery and operates it with skill, a lower quality of cotto used for a given quality of cloth.

The accompanying tables, which give da cotton used by mills in 32 basic fabrics a show only ranges or averages. In any group making one of the fabrics, the cotton used w over a fairly wide range.

For example, the grade of ounce duck ra Good Ordinary to Good Middling, a spread of

Code for Grade, Color, and Leaf Designation of Cotton

Grade	White	Spotted	Tinged	Yellow-Stained	Gray
SGM	106				
GM	105	101	94	86	93
SM	104	99	91	81	91
SM–	103	97	88	78	89
M+	101	95	85	75	86
M	100	93	82	73	84
M–	98	90	80		
SLM+	96	86	77		
SLM	94	83	75		
SLM–	91	81	73		
LM+	88	78	70		
LM	85	75	68		
LM–	82				
SGO+	79				
SGO	76				
SGO–	74				
GO+	72				
GO	70				
GO–	65				
Below grade	60				

GRADES BELOW THE LINE are not tenderable on futures contract. Light spotted cotton is approximately halfway between full grade and spotted. Light gray falls slightly below the halfway point between the full grade and gray. Middling spotted is slightly lower than Strict Low Middling. Two points are not quite enough to reduce cotton one grade; three points reduce grade one full step.

Sta

Card

Staple length (ins.)	Part waste 2s to 12s (%)	Heavy 15s and und (%)
13/16 and shorter	2.91	1.10
7/8 to 29/32	14.76	11.64
15/16 to 31/32	32.34	26.43
1 to 1 1/32	42.01	49.62
1 1/16 to 1 3/32	7.64	11.07
1 1/18 to 1 5/32	0.34	0.14
1 3/16 to 1 7/32	–	–
1 1/4 and longer	–	–

Grade	Part waste 2s to 12s (%)	He 15s & (%
White cotton		
Good Middling	–	1.
Strict Middling	2.65	5.
Middling	7.09	23.
Strict Middling	18.38	29.
Low Middling	15.75	14.
Strict Good Ordinary	14.79	3.
Good Ordinary	2.54	0.
Spotted cotton		
Strict Middling and better	4.08	4.
Middling	11.05	9.
Strict Low Middling	9.17	4.
* Other colored cotton	14.50	3.

* Includes Low Middling Spotted, all grades of Ti

3	3	9	100
2	3	11	100

fibers available is forcing mills to select fibers better adapted for end products. Just as years ago wool proved best for such products as outerwear and carpets and cotton was best for shirts and

As to specific losses of markets for cotton, tire-cord and chafer-fabric story probably is most extreme example. As shown in the 1

ASIC FABRICS AND YARNS

• Over 8-million bales of cott

lity of cotton may be

hich give data on the sic fabrics and yarns, In any group of mills cotton used would vary

unce duck ranges from a spread of 14 grades.

Average grade is 94.2.

Staple length ranges from 13/16 to 1 1/32 ins., a difference of nearly 1/4 in. Average is 30.3 (32nd in.).

Ounce duck is woven from yarn with a lower breaking strength than either numbered duck or chafer fabric, but the yarn-appearance grade is higher.

The figures shown in these tables are based on samples taken from 21,000 bales of cotton comprising 958 mixes in 162 cotton mills, from 1947 to 1954.

Staple Length of Cotton Used

	Carded Yarn			Combed Yarn		All products
te s	Heavy 15s and under (%)	Medium 16s to 25s (%)	Fine Over 25s (%)	Medium 50s and under (%)	Fine Over 50s (%)	(%)
	1.10	0.04	–	–	–	0.42
	11.64	5.04	–	–	–	5.17
	26.43	20.78	1.51	0.58	–	14.75
	49.62	56.26	48.07	27.48	1.87	46.79
	11.07	17.47	47.45	56.69	26.54	28.68
	0.14	0.40	2.97	15.08	31.87	3.63
	–	0.01	–	0.17	20.46	0.30
	–	–	–	–	19.26	0.26

Grade of Cotton Used

	Carded Yarn			Combed Yarn		All products
rt waste s to 12s (%)	Heavy 15s & under (%)	Medium 16s to 25s (%)	Fine Over 25s (%)	Medium 50s & under (%)	Fine Over 50s (%)	(%)
–	1.10	1.28	0.84	2.59	2.40	1.30
2.65	5.84	10.50	16.21	29.87	25.64	13.49
7.09	23.70	34.28	42.01	48.82	45.44	34.62
18.38	29.36	31.16	24.64	15.24	21.36	26.06
15.75	14.30	7.68	3.15	0.23	1.27	7.49
14.79	3.37	1.91	0.12	–	–	2.02
2.54	0.47	0.11	–	–	–	0.25
4.08	4.29	3.09	4.94	2.01	1.27	3.71
11.05	9.58	6.37	6.16	1.21	2.25	6.52
9.17	4.72	2.89	1.47	0.03	0.37	2.81
14.50	3.27	0.73	0.46	–	–	1.73

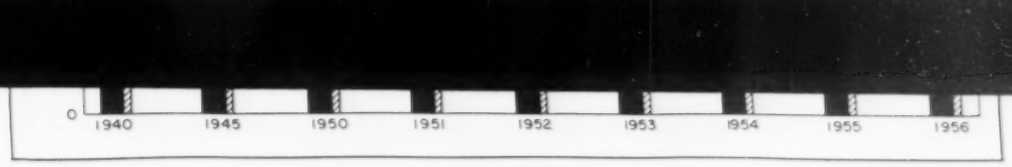
, all grades of Tinged, Yellow-Stained, and Gray and below-grade cottons.

Description of Cotton Used

Product	Range in grade	Average grade index all mills	Range of staple length (ins.)	Average staple length all mills (32nd in.)
Carded cotton products				
Broad woven goods				
Ounce duck	GO to GM	94.2	13/16 to 1 1/32	30.3
Numbered duck	LM+ to M	95.0	29/32 to 1 1/16	32.2
Chafer fabric	LM to M	93.6	15/16 to 1 1/16	32.5
Coarse- and medium-yarn fabrics				
Osnaburg	GO to SLM	80.5	13/16 to 1 1/32	30.3
Sheeting, narrow	LM to GM	96.5	7/8 to 1 1/16	31.3
Sheeting, wide	LM to SM	96.7	31/32 to 1 1/16	32.5
Drill	LM to SM	97.7	29/32 to 1 1/32	30.9
Twill	LM to M	97.0	15/16 to 1 3/32	32.5
Sateen	LM to SM	95.4	7/8 to 1 3/32	31.9
Print-cloth-yarn fabrics				
Window-shade cloth	M to SM	100.3	1 1/32 to 1 3/32	34.3
Plain print cloth	LM to SM	96.4	1 to 1 1/8	33.6
Tobacco and cheese cloth	SLM to M	97.8	1 to 1 3/32	33.7
Carded broadcloth	LM+ to SM	98.6	1 to 1 1/8	33.4
Colored-yarn fabrics				
Denim	LM to SM	93.2	7/8 to 1 1/16	31.8
Chambray, gingham, and seersucker	LM to SM	97.0	31/32 to 1 3/32	33.0
Bed ticking	LM to M	93.9	15/16 to 1 3/32	32.5
Towels and toweling				
Turkish and terry, woven	LM to M	90.4	31/32 to 1 1/16	32.5
Huck and damask, plain and jacquard woven	SGO to SLM	84.0	31/32 to 1 1/16	32.3
Napped cotton fabrics				
Blankets and blanketing	LM to SM	94.5	13/16 to 1 1/16	29.8
Flannel	LM to M	93.7	15/16 to 1 1/16	32.3
Other woven fabrics and specialties				
Bedspread fabric	LM to M	93.6	29/32 to 1 3/32	32.6
Drapery, upholstery, and tapestry	LM to M	92.5	7/8 to 1 1/32	31.3
Corduroy	SLM to SM	96.5	1 to 1 3/32	33.7
Yarn				
Knitting yarn	SLM to GM	101.8	1 to 1 1/16	33.0
Weaving yarn	LM to GM	97.8	29/32 to 1 1/8	32.6
Miscellaneous sales yarns				
All cotton	SGO to SM	96.3	7/8 to 1 1/16	32.4
Part waste	SGO to M	90.8	7/8 to 1 1/32	31.7
Tire cord	LM to SM	96.6	1 to 1 3/32	33.5
Combed cotton products				
Broad woven goods				
Fine broadcloth	SLM to SM	99.3	1 1/32 to 1 5/32	34.8
Fine lawn and organdy	SLM to SM	98.0	1 1/16 to 1 9/32	35.7
Yarn				
Knitting yarn	M to GM	102.0	1 to 1 1/4	35.2
Thread yarn	M to GM	102.5	1 1/16 to 1 5/16	37.4

* Carded yarns were carded at 9 1/2 lbs. per hr; combed yarns were carded at 3 1/2 lbs. per hr.

consumption of cotton will turn up again because of its desirable properties and intensive promotion by textile manufacturers.



otton go into these 32 standard fabrics and yarns

- Small average differences indicate that a given cotton may be used for many fabrics
- Differences between mill operations can make cotton for a given fabric cost more or less

Fiber Properties of Cotton Used					Manufacturing Performance of Cotton Used				Bales of Cotton Used (thousands)		
Fibrograph upper-half mean (ins.)	Uniformity ratio (index)	Tensile strength (1,000 psi.)	Fineness (micrograms per in.)	Maturity (%)	Picker and card waste (%)	Neps per 100 sq. ins. of card web*	Yarn strength (lbs.)	Yarn appearance**	1939	1947	1954
0.95	78	79	4.7	82	10.5	24	97	B	184	221	294
1.00	79	83	4.3	80	7.9	19	104	C+	76	67	75
1.01	79	83	4.3	80	8.2	22	103	C+	39	146	114
0.95	76	77	4.1	76	15.9	47	92	C	214	220	123
0.98	78	79	4.6	79	8.9	15	102	B	620	935	684
1.02	78	79	4.4	80	8.6	19	109	B	377	479	487
0.96	78	80	4.6	82	9.3	16	100	B	230	288	238
1.03	78	78	4.3	83	8.9	27	106	B	84	229	487
1.02	79	78	4.3	83	9.2	29	103	B	48	71	67
1.07	80	82	4.4	83	6.8	15	116	B	–	66	50
1.04	78	78	4.2	81	8.7	21	110	B	668	572	914
1.04	79	84	4.4	82	7.2	13	111	B	102	153	145
1.06	78	80	4.3	82	8.4	17	112	B	149	143	346
0.99	79	80	4.5	80	9.1	18	103	C+	268	349	462
1.06	79	77	4.4	83	9.4	29	106	B	76	112	92
1.01	79	84	4.0	78	8.5	23	108	C+	69	105	93
1.06	78	75	4.1	81	11.1	40	101	C+	178	211	261
1.05	77	73	4.0	79	12.4	59	98	C	85	81	97
0.95	79	80	4.5	78	8.7	17	99	B	–	89	61
1.03	79	78	4.2	78	10.1	30	108	B	261	323	147
1.06	79	78	4.2	83	10.0	31	107	B	50	94	58
0.98	79	74	4.3	82	10.9	37	92	C+	150	228	334
1.08	79	78	4.4	85	8.6	27	106	B+	54	94	117
1.03	79	79	4.3	78	7.6	21	112	B	402	465	316
1.04	80	83	4.0	78	7.9	20	110	D+	489	666	634
1.01	80	83	4.2	78	7.6	20	106	B	161	299	446
0.96	77	81	4.0	75	13.3	83	85	D			
1.05	78	79	4.3	80	7.9	34	117	C+	585	686	29
1.09	79	81	4.3	77	9.0	23	37	B	126	111	176
1.16	78	82	4.0	78	11.4	19	39	B	65	54	158
1.11	80	83	4.2	78	8.7	19	39	B	295	361	449
1.18	79	87	4.0	79	8.8	25	43	C+	109	119	141
								Total.....	6,214	8,017	8,095

** Laboratory yarn numbers: carded, 22s; combed, 60s.

TEXTILE WORI

Photomicrographs were made available through the courtesy of the Southern Utilization Research and Development Div., Agricultural Research Service, U. S. Dept. of Agriculture, New Orleans, La.

Fiber-property and manufacturing data were taken from studies made by the Agricultural Marketing Service, U. S. Dept. of Agriculture, Washington, D. C.

Coker 100 Wilt

RAW-COTTON PROPERTIES

	Season	Region of Growth			
		Southeast	Mid-South	Average	Southeast
Classification	1955	SLM to M+	LM to M+	–	SLM to M
	1956	LM to SM	SLM	96.6	SLM to SLM
Grade	1957	SGO+ to SM	–	93.5	LM to SM
Staple Length	1955	1 to 1 1/16	1 1/16 to 1 3/32	–	1 1/32 to 1 1
	1956	1 to 1 1/16	1 1/32 to 1 1/16	33.2	1 1/16
(ins.)	1957	29/32 to 1 3/32	–	32.8	1 to 1 1/8
Fiber Length	1955	0.96 to 1.12	1.02 to 1.06	–	1.01 to 1.06
Upper-Half Mean (ins.)	1956	0.93 to 1.11	1.02 to 1.08	1.02	1.02 to 1.05
	1957	0.91 to 1.09	–	1.01	0.97 to 1.08
	1955	75 to 84	78 to 79	–	80 to 82
Uniformity Ratio	1956	73 to 83	77 to 81	78	78 to 82
	1957	75 to 83	–	79	78 to 81
Fineness	1955	3.2 to 4.9	3.5 to 4.4	–	3.8 to 4.2
Micronaire	1956	3.3 to 4.9	3.6 to 3.8	4.1	3.7 to 4.1
	1957	3 to 4.7	–	4.2	4.2 to 4.3
Causticaire	1956	3.5 to 5	3.6 to 4	4.2	3.8 to 4.2
	1957	3.2 to 4.9	–	4.2	4.1 to 4.4
	1955	68 to 81	72 to 81	–	73 to 78
Maturity Index	1956	72 to 82	74	77	73 to 78
	1957	67 to 82	–	78	77 to 79
Tensile Strength (Pressley)	1955	82 to 106	100 to 106	–	95 to 102
1/8-in. gauge	1956	88 to 105	98 to 104	97	97 to 98
	1957	82 to 105	–	94	92 to 103
Zero gauge	1955	70 to 82	78 to 81	–	75 to 80
(1,000 psi.)	1956	66 to 85	81 to 83	79	77 to 80
	1957	74 to 88	–	80	78 to 83
Zero gauge	1956	32.7 to 42.1	40.1 to 41.1	39.1	38.1 to 39.6
(Grams per Tex number)	1957	35.6 to 43.6	–	39.6	38.6 to 41.1
Nonlint Content	1955	1.7 to 5.9	2.4 to 4.8	–	3 to 4.4
(%)	1956	1.9 to 5.7	2.8 to 3.5	3.3	4.1 to 4.8
	1957	1.3 to 9.2	–	3.4	1.9 to 6.5
Color of Raw Cotton	1955	67 to 79.3	71.5 to 78	–	77.5 to 79
Reflectance (R_d)	1956	60.8 to 77.8	68 to 74.9	70.5	70.5 to 72.1
	1957	56.7 to 76.8	–	70	65.4 to 77
Yellowness	1955	8 to 10.4	8.1 to 9.1	–	7.9 to 8.8
(+b)	1956	7 to 10.4	7.7 to 8.4	8.6	8 to 8.4
	1957	7.5 to 9.9	–	8.6	7.7 to 9.2
Sugar Content)	1955	0.0 to 0.3	0.0 to 0.3	–	0.2 to 0.4
(%)	1956	0.0 to 0.5	0.1 to 0.2	0.1	0.1 to 0.3
	1957	0.0 to 0.3	–	0.1	0.0 to 0.2
Acid-Alkaline Value	1956	6.7 to 9.3	7.3 to 8.1	7.8	6.7 to 8.4
(pH units)	1957	6.7 to 9.6	–	8.2	6.6 to 9.3
Moisture Regain	1956	15 to 19	16.2 to 16.9	16.6	16.1 to 16.9
(% at 92% R.H.)	1957	14.4 to 18.4	–	16.1	14.8 to 17.4
Carding Rate (lbs. per hr.)		9 1/2	9 1/2	–	9 1/2
Manufacturing Waste	1955	6.1 to 11	8 to 11.1	–	6.5 to 9.2
Picker and Card Waste (%)	1956	6.4 to 11	8.2 to 8.5	8.5	8.4 to 10
	1957	6.1 to 13.9	–	8.4	6.6 to 10.3
Comber Waste	1955				
(%)	1956	No tests run	No tests run		No tests run
	1957				

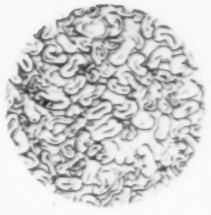
LD'S COTTON-FIBER

Deltapine 15

Region of Growth			
ast	Mid-South	Southwest	Average
o M	LM to SM	LM to SM	–
SLM+	LM to SM	SLM to SM	97.6
SM	SGO to SM	LMsp to SM	93.7
1 1/16	15/16 to 1 3/32	1 to 1 1/16	–
6	31/32 to 1 3/32	31/32 to 1 1/16	33.3
1 8	1 to 1 3/32	1 1/32 to 1 1/8	33.9
1.06	0.97 to 1.10	0.97 to 1.06	–
1.05	0.94 to 1.10	0.90 to 1.05	1.02
1.08	0.96 to 1.12	1.01 to 1.12	1.06
82	78 to 82	78 to 82	–
82	75 to 83	80 to 82	78
81	76 to 82	75 to 82	80
4.2	3.5 to 4.6	3.8 to 4.9	–
4.1	2.9 to 5	3.6 to 4.5	4.1
4.3	3.4 to 4.9	2.6 to 4.8	4.4
4.2	4.1 to 5	3.9 to 4.5	4.2
4.4	3.6 to 4.9	2.6 to 4.8	4.4
78	71 to 83	77 to 84	–
78	73 to 83	74 to 82	77
79	71 to 82	59 to 81	79
02	89 to 111	92 to 109	–
98	85 to 114	96 to 113	104
03	87 to 112	97 to 116	99
80	71 to 86	75 to 86	–
80	77 to 89	79 to 93	83
83	72 to 90	72 to 91	78
39.6	38.1 to 44.1	39.1 to 46	41.1
41.1	35.6 to 44.6	35.6 to 43.6	38.7
4	1.8 to 7.9	1.8 to 4.1	–
4.8	1.6 to 7.8	1.6 to 3.8	3.1
6.5	1.7 to 7.2	1.8 to 5.8	3.3
79	71 to 80.1	74 to 78.5	–
72.1	66.4 to 78.1	71.4 to 77.9	73.1
77	62 to 80.5	61 to 79.6	72
8.8	7.3 to 10.2	8.5 to 9.6	–
4	7 to 9.7	8.3 to 10.1	8.5
9.2	7.2 to 10.2	7.8 to 11.4	8.6
0.4	0.0 to 0.4	0.0 to 0.2	–
0.3	0.0 to 0.3	0.2 to 0.4	0.2
0.2	0.0 to 0.2	0.0 to 0.5	0.0
8.4	6.2 to 8.8	6.6 to 7.8	7.4
9.3	6.5 to 9.3	6.3 to 8.2	7.8
16.9	15 to 18.8	16.4 to 18.3	16.3
17.4	14.6 to 17.3	15.3 to 18.4	15.9
2	9 1/2	9 1/2	–
9.2	6.5 to 13.5	6.8 to 11.8	–
10	6 to 11.3	7.3 to 9.3	8.5
10.3	6.2 to 12.9	6.3 to 12.9	8.7
run	No tests run	No tests run	

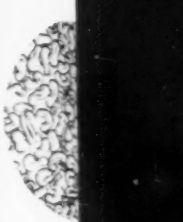
Empire WR

Region of Growth	
Southeast	Average
SLM to M	–
SLM to M	94
LM to SM	93.8
1 1/32 to 1 1/16	–
1 1/32	33
1 to 1 1/32	32
1 to 1.07	–
0.99 to 1.02	1.02
0.89 to 1.02	0.99
80 to 82	–
78 to 81	80
77 to 80	78
4.1 to 4.3	–
4.4 to 4.7	4.2
3.6 to 4.6	4.1
4.5 to 4.8	4.4
3.7 to 5.2	4.4
74 to 78	–
78 to 80	77
74 to 79	76
93 to 102	–
96 to 101	99
84 to 97	90
80 to 86	–
81 to 84	80
78 to 86	82
40.1 to 41.6	39.6
38.6 to 42.6	40.8
3.2 to 3.5	–
3.4 to 3.9	3.6
1.8 to 2.4	2.7
77.2 to 79.5	–
71.9 to 72.8	72
60.3 to 77.5	70.2
8.5 to 8.8	–
8.6 to 9.1	8.7
8.7 to 9.7	8.8
0.1 to 0.3	–
0.1 to 0.2	0.2
0.0 to 0.3	0.1
7.4 to 7.9	7.2
6.7 to 8.7	8
15.8 to 17.8	17.1
14.2 to 17.4	15.8
9 1/2	–
8.4 to 8.7	–
8.7 to 9.2	9.2
6.7 to 9.8	8.1
No tests run	



Stoneville 7

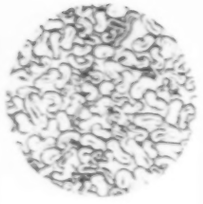
Region of Growth	
Mid-South	Average
–	–
M to SM	101.3
SLMtg to M	90.3
–	–
1 1/16 to 1 3/32	34.3
1 1/32 to 1 3/32	33.8
–	–
0.99 to 1.04	1.02
1.04 to 1.11	1.07
–	–
76 to 79	80
75 to 80	78
–	–
4.2 to 4.4	4.3
3.3 to 4.6	4.1
4.5 to 4.8	4.6
3.5 to 4.9	4.3
–	–
76 to 79	77
69 to 78	75
–	–
95 to 102	98
87 to 95	90
–	–
78 to 80	79
73 to 76	73
38.6 to 39.6	39.1
35.6 to 37.6	36.3
–	–
1.6 to 2.5	2
1.5 to 4.8	3.4
–	–
76.1 to 77.5	76.9
59.5 to 78.5	69.9
–	–
7.5 to 8.2	7.9
7.9 to 8.2	8.7
–	–
0.1 to 0.2	0.2
0.0 to 0.2	0.1
7.1 to 7.8	7.4
7.3 to 8.8	7.8
16.3 to 17.6	17.1
15.5 to 16.5	16.2
9 1/2	–
–	–
7.8 to 8	7.9
6.4 to 11.5	9.1
No tests run	



Arizo

Region	
Far-West	
M to SM	
SLM to SM	
SLM to SM	
1 1/16 to 1 1	
1 1/32 to 1 1	
1 1/32 to 1 1	
1.04 to 1.0	
1.02 to 1.1	
1.05 to 1.1	
79 to 81	
77 to 82	
75 to 82	
3.6 to 4.3	
3.9 to 4.7	
3.2 to 4.6	
3.8 to 4.5	
3.4 to 4.7	
72 to 80	
77 to 82	
69 to 80	
105 to 115	
104 to 115	
106 to 115	
82 to 92	
82 to 96	
82 to 91	
40.6 to 47.5	
40.6 to 45	
2.9 to 5.2	
2.5 to 6	
2 to 4.1	
76 to 79.5	
71 to 77.6	
68.4 to 77	
8.1 to 9.1	
7.6 to 9.1	
7.2 to 9.3	
0.1 to 0.4	
0.2 to 0.5	
0.0 to 0.2	
6.5 to 7.7	
6.8 to 8.1	
17.1 to 19.8	
16.4 to 17.4	
9 1/2	
7.8 to 10.7	
7.4 to 12.3	
7.5 to 11.4	
No tests run	

BER TABLE – 1958 Revision

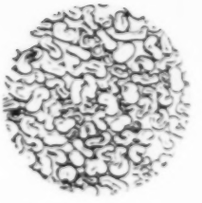


Arizona 44

Region of Growth	
Far-West	Average
M to SM	–
SLM to SM	98.8
SLM to SM	98.1
1 1/16 to 1 3/32	–
1 1/32 to 1 1/16	33.9
1 1/32 to 1 3/32	34
1.04 to 1.08	–
1.02 to 1.11	1.07
1.05 to 1.13	1.08
79 to 81	–
77 to 82	80
75 to 82	80
3.6 to 4.3	–
3.9 to 4.7	4.3
3.2 to 4.6	4
3.8 to 4.5	4.2
3.4 to 4.7	4
72 to 80	–
77 to 82	79
69 to 80	77
105 to 115	–
104 to 118	110
106 to 115	110
82 to 92	–
82 to 96	90
82 to 91	88
40.6 to 47.5	44.6
40.6 to 45	43.4
2.9 to 5.2	–
2.5 to 6	3.6
2 to 4.1	
76 to 79.5	–
71 to 77.6	73.5
68.4 to 77	74.5
8.1 to 9.1	–
7.6 to 9.1	8.7
7.2 to 9.3	8.3
0.1 to 0.4	–
0.2 to 0.5	0.3
0.0 to 0.2	0.1
6.5 to 7.7	6.9
6.8 to 8.1	7.3
17.1 to 19.8	18.2
16.4 to 17.4	16.9
9 1/2	–
7.8 to 10.7	–
7.4 to 12.3	9.3
7.5 to 11.4	9.1
No tests run	

Delfos 9169

Region of Growth		Region of Growth	
Mid-South	Average	Southwest	Average
–	–	M to SM	–
–	–	M to SM	102.7
SGO to M	89	M to SM	99.3
–	–	1 to 1 1/32	–
–	–	31/32 to 1	31.3
1 1/32 to 1 1/8	34.9	1 to 1 1/16	33.3
–	–	93 to 1.06	–
–	–	0.98 to 1.00	0.99
1.04 to 1.18	1.10	1.03 to 1.08	1.07
–	–	80 to 81	–
–	–	80 to 82	81
71 to 80	77	80 to 81	81
–	–	4 to 4.2	–
–	–	3.6 to 4	3.8
3.1 to 4.2	3.9	3.4 to 3.8	3.6
–	–	3.7 to 4	3.8
3.3 to 4.3	4	3.4 to 3.8	3.6
–	–	75	–
–	–	74 to 77	75
67 to 80	76	72 to 76	74
–	–	93 to 95	–
–	–	95 to 100	98
87 to 97	92	95 to 102	98
–	–	80 to 82	–
–	–	82 to 86	84
71 to 76	73	71 to 81	78
–	–	40.6 to 42.6	41.6
34.2 to 37.6	36.1	35.1 to 40.1	37.6
–	–	2.3 to 2.6	–
–	–	2.1 to 2.7	2.4
3.1 to 8.4	4.6	2.5 to 3.6	3.1
–	–	75.5 to 78.8	–
–	–	71.5 to 78.5	75.8
63 to 77.6	70.6	73.6 to 76.5	75.5
–	–	8.6 to 8.8	–
–	–	9.1 to 9.3	9.2
7.4 to 10.7	8.6	8.7 to 9.5	9
–	–	0.0 to 0.2	–
–	–	0.2 to 0.3	0.3
0.0 to 0.2	0.1	0.3 to 1	0.7
–	–	6.7 to 7.1	6.9
6.7 to 9.1	7.8	6.5 to 6.9	6.7
–	–	16.9 to 18.6	17.7
16 to 17.1	16.6	17.2 to 17.6	17.4
6 1/2	–	9 1/2	–
–	–	8.6 to 9.5	–
–	–	7.8 to 8.9	8.2
7.5 to 12.4	10.6	8.8 to 9.8	9.3
–	–	No tests run	–
14.6 to 18.4	16.9		



Lankart 57

Region of Growth	
Southwest	Average
LM to M+	–
SLM1tsp to SM	98.7
SLM1tsp to SM	93
29/32 to 1	–
7/8 to 1 1/32	27.7
7/8 to 1 1/16	30.9
0.86 to 1.00	–
0.83 to 1.06	0.92
0.86 to 1.05	0.97
78 to 82	–
79 to 83	80
78 to 83	79
3.2 to 5	–
3.6 to 4.8	4.1
2.8 to 5	4.2
3.9 to 5	4.3
3.2 to 5.1	4.4
63 to 83	–
72 to 80	76
62 to 81	75
84 to 100	–
91 to 105	98
85 to 103	95
63 to 81	–
70 to 88	80
66 to 88	77
34.6 to 43.6	39.6
32.6 to 43.6	38.3
2.2 to 7.3	–
1.9 to 7.5	3.6
2.3 to 5.5	3.5
69 to 78	–
68.5 to 75.8	72.5
67.8 to 76	69.2
9 to 11.2	–
8.4 to 10.6	9.4
8.5 to 10.3	9.8
0.0 to 0.4	–
0.0 to 0.6	0.3
0.0 to 0.3	0.2
6.1 to 8.5	6.9
6.2 to 8.2	6.9
15.7 to 20.3	17.9
15.1 to 18.8	16.8
9 1/2	–
8.1 to 13.1	–
7 to 13.5	9.5
7.5 to 12.3	9.4
No tests run	–

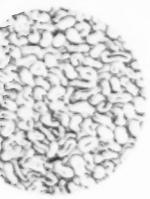
Northern Star

Region of Growth	
Southwest	Average
SLM to M	–
SLM to SM1tsp	97.5
SLM1tsp to M1tsp	93.3
29/32 to 1	–
31/32 to 1 1/32	32
1 to 1 1/32	32.3
0.96 to 1.06	–
0.92 to 1.04	0.99
1.01 to 1.05	1.02
79	–
78 to 81	80
79 to 81	80
4 to 4.4	–
3.6 to 4.2	4
3.2 to 4.4	3.8
4 to 4.4	4.2
3.8 to 4.6	4.1
78 to 76	–
71 to 78	75
66 to 77	72
94 to 98	–
93 to 104	100
97 to 99	98
76 to 90	–
77 to 87	79
75 to 82	78
38.1 to 40.1	39.1
37.1 to 40.6	38.6
3.2 to 4.4	–
2.8 to 5.1	3.6
2.2 to 3.4	2.6
71.2 to 76.5	–
72.3 to 76.4	74.3
71.3 to 74.5	72.6
9.1 to 10.8	–
8.1 to 9.1	8.7
9.1 to 10.2	9.6
0.1 to 0.5	–
0.3 to 0.4	0.3
0.0 to 0.2	0.1
6.4 to 7.8	7
6.7 to 8	7.2
17.5 to 19.2	18.2
16.9 to 17.4	17.1
9 1/2	–
9.1 to 9.7	–
7.7 to 10.5	8.4
8.2 to 9.4	8.8
No tests run	–

Pi

Region
Far-Wes
2 to 4
2 to 3
3 to 5
1 3/8 to 1
1 3/8 to 1
1 3/8 to 1
1.35 to 1.
1.38 to 1.
1.37 to 1.
27 to 31
24 to 31
27 to 33
3.1 to 3.
2.8 to 3.
3.4 to 4
3.3 to 3.
2.9 to 3.
76 to 8
76 to 8
75 to 8
145 to 16
145 to 16
148 to 16
92 to 10
94 to 10
90 to 10
47 to 50.
46.5 to 5
2 to 3.8
2 to 3.6
2 to 5.6
69.9 to 71
65.6 to 70
65.3 to 69
10.4 to 11
10 to 11.
9.7 to 11.
0.1 to 0.
0.0 to 0.
0.0 to 0.
6.2 to 6.
6 to 7.3
16.9 to 18
15.7 to 17
4 1/2
8.8 to 12
8.9 to 9.
8.7 to 11
13.8 to 16
12.5 to 17
14.4 to 17

Compiled by
WILLIAM G. ASHMORE, Associate Editor



Pima S-1

Region of Growth	
West	Average
o 4	–
o 3	2.6
o 5	3.5
o 1 7/16	–
o 1 7/16	45.5
o 1 7/16	45.7
o 1.47	–
o 1.46	1.43
o 1.52	1.43
31 CV	–
31 CV	29
33 CV	29
o 3.4	–
o 3.2	3
to 4	3.7
o 3.5	3.4
o 3.5	3.3
o 82	–
o 81	79
o 83	79
o 162	–
o 161	154
o 162	155
o 102	–
o 102	98
o 104	98
50.5	48.5
to 52	48.6
3.8	–
3.6	2.9
5.6	3.4
o 71.5	–
o 70.5	68.4
o 69.2	67.3
o 11.1	–
11.2	10.5
11.1	10.2
o 0.5	–
o 0.4	0.2
o 0.4	0.2
o 6.8	6.5
7.3	6.7
o 18.8	17.8
o 17.7	16.5
1/2	–
o 12.3	–
o 9.8	9.2
o 11.8	10.8
o 18.8	–
o 17.2	15.6
o 17.7	15.4

Acala 4-42

Region of Growth	
Far-West	Average
SLM to SM	–
SLM to SM	99
SLM to SM	99.5
1 1/16 to 1 3/32	–
1 1/32 to 1 3/21	34.1
1 1/16 to 1 3/32	34
1.02 to 1.10	–
1.02 to 1.10	1.07
1.04 to 1.08	1.06
79 to 81	–
77 to 82	81
78 to 81	80
3.8 to 4.6	–
4.0 to 5.0	4.5
3.6 to 4.6	4.3
4.0 to 4.8	4.5
3.6 to 4.8	4.4
77 to 81	–
77 to 82	79
74 to 80	78
105 to 122	–
111 to 134	117
105 to 116	112
81 to 93	–
82 to 99	90
85 to 103	88
40.6 to 49	44.6
41.1 to 45	43.7
2.1 to 6	–
1.4 to 4.1	3.1
1.7 to 4.3	2.7
75.7 to 83	–
71 to 79.3	74.9
74 to 80.5	76
7 to 8.3	–
6.9 to 8.6	7.9
7 to 8.3	7.7
0.1 to 0.4	–
0.1 to 0.5	0.3
0.2 to 0.7	0.3
6.4 to 7.4	6.9
6.4 to 7.4	7
16.2 to 19.4	17.8
16.4 to 18.2	17
9 1/2 (carded) 6 1/2 (combed)	–
6.9 to 10.6	–
7.2 to 10.2	8.8
6.8 to 10.7	8
–	–
–	–
–	–

Acala 1517-C

Region of Growth	
Far-West	Average
SLM to SM	–
M to GM	103.2
SLM to SM	100.5
1 3/32 to 1 5/32	–
1 1/8 to 1 5/32	36.3
1 1/8 to 1 3/16	37
1.06 to 1.18	–
1.06 to 1.23	1.15
1.12 to 1.23	1.17
76 to 83	–
74 to 85	79
79 to 85	81
2.2 to 4	–
3.4 to 4.2	3.7
2.8 to 4.2	3.7
3.4 to 4.1	3.7
3 to 4.1	3.6
58 to 80	–
72 to 85	76
66 to 81	75
106 to 118	–
109 to 121	115
108 to 128	114
79 to 91	–
79 to 91	85
82 to 91	86
39.1 to 45.5	42.1
40.6 to 45	42.7
1.8 to 4.8	–
1.5 to 4	2.4
0.7 to 3	2.2
75.5 to 82.5	–
74.6 to 80.4	78.7
73 to 81	78.5
8.1 to 8.8	–
7.5 to 8.7	8.1
7.3 to 9.5	8
0.0 to 0.5	–
0.0 to 0.6	0.4
0.0 to 0.6	0.3
6.2 to 8.2	6.6
6.2 to 8	6.9
15.4 to 21.1	18.7
17 to 19.1	18.1
6 1/2	–
6.8 to 10.2	–
6.9 to 9.1	8.1
6.4 to 9.6	7.7
14 to 17.8	–
12.3 to 18.1	14.7
12.1 to 15.2	13.8

Ratings of Fiber-Property and Manufacturing-Performance Values

YARN REFLECTANCE AND COLOR

Reflectance	Gray	Bleached
Low (poor)	Below 67	Below 80
Average	67 to 72	80 to 84
High (good)	Above 72	Above 84

Yellowness		
Low (good)	Below 10.5	Below 2.5
Average	10.5 to 12.4	2.5 to 3.9
High (poor)	Above 12.4	Above 3.9

Reflectance	Dyed after bleaching
Low (good)	Below 26
Average	26 to 29
High (poor)	Above 29

Blueness	
Light (low dye uptake)	Below 25.0
Average	25.0 to 26.5
Deep (high dye uptake)	Above 26.5

Note: The significance of reflectance between gray and dyed materials is reversed. Low reflectance indicates good dyeing properties; high reflectance means poor dyeing.

FIBER STRENGTH

1/8-in Gauge

Group	Staple length	Average index
1 (Upland)	1 5/16 ins. and shorter	90
2 (Upland)	31/32 to 1 1/16 ins.	100
3 (Upland)	1 3/32 to 1 1/4 ins.	110
4 (American Egyptian)	1 9/32 ins. and longer	150

Zero Gauge

1,000 psi.	Designation	Grams per Tex
Above 95	Very strong	Above 47
86 to 95	Strong	42 to 47
76 to 85	Average	37 to 42
66 to 75	Fair	32 to 37
Below 66	Weak	Below 32

ACID-ALKALINE VALUE

Values above pH 7.0 (neutral point) indicate alkalinity, which when associated with low sugar content may result in fiber deterioration from micro-organisms.

YARN LUSTER

Designation	50s combed gray	50s combed mercerized
Low	Below 33	Below 40
Average	33 to 34	40 to 44
High	Above 34	Above 44

MATURITY

Above 81	Mature
76 to 81	Average
70 to 75	Immature
Below 70	Very immature

MOISTURE REGAIN

Above 18	High
16 to 18	Average
Below 16	Low

GRADE INDEX

Grade index is based on the average classification for early, midseason, and late cotton. Middling grade with an index of 100 is the basis for the values used.

NEPS

(Medium staple Upland cottons)

Below 16	Low
16 to 30	Average
31 to 45	High
Above 46	Very high

MANUFACTURING PERFORMANCE

Carding Rate (lbs. per hr.)					
Manufacturing Waste Picker and Card Waste (%)	1955 1956 1957	6.1 to 11 6.4 to 11 6.1 to 13.9	8 to 11.1 8.2 to 8.5 –	– 8.5 8.4	6.5 to 9.2 8.4 to 10 6.6 to 10.3
Comber Waste (%)	1955 1956 1957	No tests run	No tests run		No tests run
Neps (100 sq. ins. of card web)	1955 1956 1957	4 to 23 7 to 25 6 to 33	15 to 35 15 to 18 –	– 16 16	4 to 13 11 to 14 8 to 19
Strength of Gray Yarn (lbs.) 22s	1955 1956 1957	85 to 126 95 to 132 79 to 130	104 to 118 118 to 134 –	– 117 109	123 to 129 115 to 127 102 to 125
50s	1955 1956 1957	30 to 44 33 to 48 24 to 46	36 to 42 42 to 48 –	– 41 37	42 to 46 41 to 45 35 to 44
80s	1955 1956 1957	No 80s spun	No 80s spun		No 80s spun
Break Factor (average for 22s and 50s)	1955 1956 1957	1,635 to 2,486 1,895 to 2,602 1,469 to 2,580	2,044 to 2,348 2,348 to 2,674 –	– 2,312 2,135	2,403 to 2,55 2,290 to 2,52 1,997 to 2,47
Appearance of Gray Yarn 22s	1955 1956 1957	C+ to B+ C to B+ D+ to B+	C+ to B C+ to B –	– 103 107	B C+ C+ to B
50s	1955 1956 1957	C to B C to C+ D to B	D to C+ C to C+ –	– 96 98	C+ to B C to C+ C+
80s	1955 1956 1957	No 80s spun	No 80s spun		No 80s spun
Appearance Index (average for 22s and 50s)	1955 1956 1957	90 to 115 90 to 110 75 to 115	85 to 105 95 to 105 –	– 100 102	105 to 110 95 to 100 100 to 105
Color of 22s Carded Yarn					
Gray – Reflectance (R_d)	1956 1957	59.8 to 73.4 55 to 71.8	67.6 to 69.6 –	69.2 66	68.4 to 73.6 61 to 71.8
Gray – Yellowness (+b)	1956 1957	9 to 13.2 10.1 to 12.4	9.7 to 11.4 –	11.1 11.3	10.3 to 10.8 10.2 to 12
Bleached – Reflectance (R_d)	1956 1957	78.1 to 84.4 74.8 to 85.4	82.8 to 84.4 –	82.6 83.9	80.5 to 83.9 78.4 to 84.7
Bleached – Yellowness (+b)	1956 1957	2.8 to 9.4 2.6 to 5.2	3.2 to 3.4 –	3.8 3.9	3.2 to 3.4 2.8 to 5
Dyed After Bleaching – Reflectance (R_d)	1956 1957	26.3 to 32.3 25.4 to 30.9	28.2 to 31.9 –	28.7 28	28 to 29.6 24.9 to 30
Dyed After Bleaching – Blueness (–b)	1956 1957	21 to 26.1 21.6 to 27	24 to 25.3 –	24.6 25.2	24.4 to 25 24.2 to 27.6
Luster of 50s Combed yarn – Gray	1956 1957				
Luster of 50s Combed yarn – Mercerized	1956 1957				

REPRINTS OF THIS CHART are availa
or 40¢ each in lots of 20 or more. Se
TEXTILE WORLD, 330 W. 42nd St., New

.2	6.5 to 13.5	6.8 to 11.8	–	8.4 to 8.7	–	–	–	7.8 to 10.7
.0	6 to 11.3	7.3 to 9.3	8.5	8.7 to 9.2	9.2	7.8 to 8	7.9	7.4 to 12.3
0.3	6.2 to 12.9	6.3 to 12.9	8.7	6.7 to 9.8	8.1	6.4 to 11.5	9.1	7.5 to 11.4
run	No tests run	No tests run		No tests run		No tests run		No tests run
3	4 to 28	4 to 21	–	7 to 14	–	–	–	9 to 21
4	4 to 48	11 to 33	14	8 to 11	17	10 to 14	13	12 to 34
9	4 to 36	5 to 28	12	15 to 32	18	6 to 19	11	8 to 39
29	92 to 128	104 to 122	–	116 to 126	–	–	–	103 to 124
27	102 to 133	104 to 122	116	115 to 119	114	109 to 112	110	109 to 129
25	98 to 132	110 to 132	115	88 to 127	108	97 to 111	105	113 to 130
46	31 to 44	34 to 43	–	40 to 46	–	–	–	35 to 44
45	34 to 45	34 to 41	40	39 to 41	40	36 to 38	37	36 to 47
44	33 to 47	39 to 48	38	27 to 44	36	34 to 39	36	42 to 47
pun	No 80s spun	No 80s spun		No 80s spun		No 80s spun		No 80s spun
,558	1,950 to 2,448	1,994 to 2,417	–	2,276 to 2,536	–	–	–	2,055 to 2,430
,522	2,030 to 2,558	1,994 to 2,356	2,276	2,240 to 2,334	2,254	2,099 to 2,184	2,135	2,265 to 2,522
,475	1,903 to 2,627	2,185 to 2,656	2,279	1,643 to 2,497	2,100	1,917 to 2,196	2,073	2,326 to 2,605
	C to B+	C+ to B+	–	C+ to B	–	–	–	C+ to B+
	C to B+	C to B+	108	B to B+	105	B	107	D+ to C+
B	C to B+	C to B+	108	C+ to B	103	C+ to B	105	D to B+
B	D+ to B+	D+ to B	–	C+	–	–	–	D to C
+	C to B+	C to B	96	C+ to B	97	C+ to B	102	D to C
	D+ to C	D to B	95	C to C+	95	C to C+	93	BG to C+
pun	No 80s spun	No 80s spun		No 80s spun		No 80s spun		No 80s spun
110	85 to 115	90 to 115	–	100 to 105	–	–	–	80 to 100
00	80 to 115	95 to 115	102	105 to 115	101	105 to 110	104	75 to 95
105	85 to 115	60 to 115	102	95 to 105	99	95 to 105	99	65 to 110
73.6	65.6 to 74.2	68.2 to 73	71.1	70.2 to 72.4	70.5	72.2 to 74.6	71.8	69.3 to 73.6
1.8	57 to 73.6	56.7 to 73.6	67.4	60 to 71.6	65.9	53.4 to 72.7	66.3	65.2 to 71.5
10.8	10 to 12.2	11.5 to 12.4	11.1	10.8 to 11.6	11.1	9.8 to 11.2	10.9	10.5 to 12.2
12	9.9 to 12.6	10.8 to 13.2	11.3	11 to 12.1	11.4	10.7 to 13.4	11.3	10.8 to 12.6
83.9	81 to 84.6	82.3 to 84.8	83.1	82 to 84	82.1	82.1 to 84	83	81.8 to 85.4
84.7	79.8 to 85	81.9 to 85.4	83.1	82.1 to 84.4	83.2	80.9 to 84.4	83.1	81 to 85
3.4	2.8 to 3.9	3 to 3.8	3.3	3.4 to 4.2	3.6	2.6 to 3.3	3	3 to 3.8
5	2.8 to 5.6	3.1 to 5.5	3.8	3.3 to 5.6	4.4	3.3 to 4	3.9	3.3 to 4.7
9.6	25.8 to 31.4	26.2 to 29.1	28.3	27.5 to 28.7	28	26.9 to 29	28.1	25.8 to 28.5
30	24.2 to 29.8	23.9 to 28.9	26.4	27.5 to 29.1	28.3	25.5 to 27.6	26.1	25 to 28.1
25	24 to 22.4	24.9 to 27.2	25.6	25.6	25.6	25.6 to 26.7	26.1	25 to 26.8
27.6	23.8 to 27.6	24.8 to 27.6	26	23.7 to 25.8	24.9	24.7 to 27	26	24.4 to 26.9

vailable at 50¢ each
. Send requests to
New York 36, N. Y.

Entire contents copyr
All rights reserved.

9 1/2	–	6 1/2	–	9 1/2	–	9 1/2	–	9 1/2	–	
7.8 to 10.7	–	–	–	8.6 to 9.5	–	8.1 to 13.1	–	9.1 to 9.7	–	8.
7.4 to 12.3	9.3	–	–	7.8 to 8.9	8.2	7 to 13.5	9.5	7.7 to 10.5	8.4	8.
7.5 to 11.4	9.1	7.5 to 12.4	10.6	8.8 to 9.8	9.3	7.5 to 12.3	9.4	8.2 to 9.4	8.8	8.
No tests run		– – 14.6 to 18.4	– – 16.9	No tests run	–	No tests run	–	No tests run	–	13. 12. 14.
9 to 21	–	–	–	7 to 13	–	4 to 28	–	12 to 16	–	
12 to 34	19	–	–	19 to 24	21	6 to 62	16	14 to 28	20	
8 to 39	25	9 to 31	16	20 to 26	22	4 to 50	14	10 to 17	13	
103 to 124	–	–	–	100 to 107	–	96 to 109	–	99 to 120	–	No
109 to 129	120	–	–	103 to 105	104	93 to 114	104	99 to 118	110	
113 to 130	123	90 (*108) to 123 (135)	104 (118)	108 to 110	109	92 to 112	103	110 to 112	111	
35 to 44	–	–	–	34 to 37	–	30 to 39	–	32 to 39	–	6
36 to 47	42	–	–	35 to 36	35	30 to 38	34	32 to 40	36	7
42 to 47	44	31 (37) to 44 (47)	37 (41)	38 to 40	39	26 to 40	36	36 to 39	38	6
No 80s spun		No 80s spun	–	No 80s spun		No 80s spun		No 80s spun		3 3 3
2,055 to 2,439	–	–	–	1,950 to 2,102	–	1,690 to 2,240	–	1,889 to 2,295	–	*3,2
2,265 to 2,522	2,370	–	–	2,008 to 2,055	2,019	1,767 to 2,204	1,994	1,889 to 2,295	2,110	3,3
2,326 to 2,605	2,455	1,756 (2,113) to 2,453 (2,508)	2,116 (2,380)	2,138 to 2,210	2,186	1,607 to 2,254	2,014	2,110 to 2,207	2,171	3,2
C+ to B+	–	–	–	B to B+	–	D to B+	–	C+ to B	–	
D+ to C+	93	–	–	C+ to B	107	D+ to B	103	C+ to B	102	No
D to B+	93	D+ (C) to B (B+)	99 (103)	C+ to B	103	D to B+	105	C+	100	
D to C	–	–	–	C+	–	D+ to C+	–	D+ to C	–	
D to C	81	–	–	C to C+	97	BG to C+	91	D to C+	83	
BG to C+	82	BG (D+) to C+ (C+)	88 (98)	D+ to C	87	BG to B	91	C	90	
No 80s spun		No 80s spun		No 80s spun		No 80s spun		No 80s spun		
80 to 100	–	–	–	105 to 110	–	65 to 110	–	90 to 100	–	*1
75 to 95	87	–	–	100 to 105	102	70 to 105	97	85 to 105	92	1
65 to 110	88	70 (85) to 105 (110)	95 (100)	90 to 100	95	65 to 115	98	95	95	1
69.3 to 73.6	73.2	–	–	71.1 to 73	71.9	64.6 to 71.3	68.5	69 to 72.9	71.2	**
65.2 to 71.5	69.5	56.2 to 72.7	66.5	70.8 to 72.2	71.6	58.8 to 71.2	64.5	63.6 to 68.2	65.5	62
10.5 to 12.2	10.4	–	–	11.4 to 12	11.7	11 to 13	11.9	10.4 to 11.6	11	12
10.8 to 12.6	11.5	10.6 to 12.3	11.3	11.8 to 12.2	12	11.6 to 13.4	12.5	12.1 to 13.3	12.9	1
81.8 to 85.4	83.5	–	–	83.9 to 84.4	84.2	79.3 to 85.2	82.6	80.6 to 84.4	83.2	83
81 to 85	83.6	80.3 to 85.1	83.2	84.8 to 85.2	85.1	82.2 to 85.2	83.3	83.6 to 84.5	84	81
3 to 3.8	3.2	–	–	3.1 to 3.6	3.3	2.8 to 4.7	3.5	3.1 to 3.6	3.4	
3.3 to 4.7	3.8	2.6 to 4.8	3.7	3.5 to 4	3.8	3 to 4.8	4	4 to 4.8	4.3	4
25.8 to 28.5	28.1	–	–	26.8 to 28.5	27.8	24.6 to 28.3	26.6	25.7 to 28.4	26.8	27
25 to 28.1	26.5	26 to 28.3	26.9	25.8 to 27.7	26.6	23.4 to 29.2	25.5	24 to 26.9	25.1	26
25 to 26.8	25.8	–	–	25.8 to 27	26.4	24.9 to 27.5	26.2	25.4 to 26.9	26.2	2
24.4 to 26.9	25.7	24.8 to 26.2	25.8	25.3 to 26.4	26	25.4 to 27.5	26.3	26 to 26.6	26.3	2
		– 35 to 37 – 40 to 44	– 34 – 42							3 3 4 5

* Figures in parentheses refer to combed yarn

* Ave
com
** Ren
50s

ire contents copyright 1958 by McGraw-Hill Publishing Co., Inc.
rights reserved. Printed in U.S.A.

Regions of Growth

4 1/2	–	6 1/2 (combed)	–	6 1/2	–
8.8 to 12.3	–	6.9 to 10.6	–	6.8 to 10.2	–
8.9 to 9.8	9.2	7.2 to 10.2	8.8	6.9 to 9.1	8.1
8.7 to 11.8	10.8	6.8 to 10.7	8	6.4 to 9.6	7.7
13.8 to 18.8	–	–	–	14 to 17.8	–
12.5 to 17.2	15.6	–	–	12.3 to 18.1	14.7
14.4 to 17.7	15.4	–	–	12.1 to 15.2	13.8
3 to 7	–	6 to 15	–	8 to 52	–
4 to 13	9	7 to 27	15	10 to 25	18
6 to 20	13	4 to 20	11	6 to 48	20
No 22s spun	–	118 to 134 (*141 to 159)	–	130 to 147 (*144 to 160)	–
		118 to 141 (141 to 153)	128 (147)	136 to 144 (150 to 161)	141 (155)
		125 to 145 (143 to 154)	130 (147)	132 to 148 (147 to 162)	141 (153)
68 to 74	–	40 to 48 (51 to 56)	–	46 to 54 (51 to 58)	–
71 to 74	73	42 to 50 (51 to 53)	45 (52)	48 to 53 (54 to 58)	51 (56)
68 to 74	72	44 to 52 (51 to 55)	46 (53)	48 to 53 (52 to 58)	51 (55)
37 to 41	–				
39 to 41	40	No 80s spun		No 80s spun	
38 to 42	40				
3,220 to 3,480	–	2,298 to 2,642 (2,835 to 3,149)	–	2,580 to 2,934 (2,856 to 3,185)	–
3,335 to 3,465	3,425	2,323 to 2,801 (2,826 to 3,058)	2,533 (2,929)	2,707 to 2,975 (2,989 to 3,210)	2,888 (3,094)
3,220 to 3,530	3,398	2,475 to 2,746 (2,848 to 3,069)	2,587 (2,934)	2,652 to 2,975 (2,942 to 3,232)	2,724 (3,064)
		C to B (B)	–	C to B+ (B to B+)	–
No 22s spun		C to B (C+ to B)	100 (108)	C to B+ (C+ to B+)	95 (107)
		C+ to B (B to B+)	105 (113)	D+ to C+ (C to B)	96 (103)
B to A	–	D to C+ (C+ to B)	–	D+ to B (D+ to B+)	–
B to A	123	D+ to C+ (C+)	89 (100)	D+ to C+ (C to C+)	89 (98)
B to A	115	C to C+ (C+ to B)	93 (103)	D to C+ (D+ to B)	90 (96)
B to B+	115				
B to B+	114	No 80s spun		No 80s spun	
C to B+	107				
*115 to 125	–	85 to 105 (105 to 110)	–	80 to 115 (85 to 115)	–
115 to 125	119	85 to 105 (100 to 105)	94 (103)	85 to 95 (95 to 110)	92 (103)
105 to 125	111	95 to 105 (105 to 110)	99 (108)	75 to 100 (85 to 110)	93 (100)
**65.2 to 69	67	69.4 to 76.1	73.2	73.8 to 76.8	75
62.6 to 66.2	64.8	69.6 to 73.2	71.9	71.1 to 78.8	73.4
12.7 to 13.3	13.1	10 to 11.4	10.4	10 to 11.2	10.7
12.9 to 14	13.4	10.2 to 11.8	10.9	10.4 to 12.5	11.1
83.3 to 85.8	84.1	81.4 to 84.8	83.5	82.9 to 85.8	84.6
81.4 to 84.4	83.4	82 to 84.9	83.5	83 to 86.4	84.9
4 to 4.3	4.1	2.8 to 3.8	3.2	2.6 to 3.4	3
4.2 to 5.6	4.9	3 to 3.4	3.3	2.4 to 3.8	3.2
27.1 to 30.7	28.9	26.7 to 30.0	28.1	25.4 to 28.4	27
26.4 to 29.6	28	23.4 to 28.1	26.2	24.8 to 28.1	26.3
25 to 29.5	28.5	24.9 to 26.8	25.8	24.8 to 26.6	25.8
24 to 26.2	25	25.4 to 26.6	26.4	24.8 to 28	26.2
39 to 42	40	33 to 34	34	32 to 34	34
39 to 42	40	33 to 35	34	33 to 35	34
48 to 53	50	42 to 43	42	41 to 44	43
50 to 56	53	43 to 45	44	39 to 47	44

* Average of 50s and 80s combed yarn
* Remaining figures apply to 50s combed yarn

* Figures in parentheses refer to combed yarn

* Figures in parentheses refer to combed yarn

Southeast Region
Alabama
Florida
Georgia
North Carolina
South Carolina
Virginia

Southwest Region
Oklahoma
Texas (except New Mexico border)

Mid-South Region
Arkansas
Louisiana
Mississippi
Missouri
Tennessee

Far-West Region
Arizona
California
New Mexico
New Mexico-Texas border

with an index of 100 is the basis for the values used.

NEPS

(Medium staple Upland cottons)

Below 16	Low
16 to 30	Average
31 to 45	High
Above 46	Very high

YARN APPEARANCE

Grade	Designation	Index
A & above	Excellent	130
B+	Very Good	120
B	Good	110
C+	Average	100
C	Fair	90
D+	Poor	80
D	Very poor	70
BG	Below grade	60

AVERAGE WASTE BY GRADE

Good Middling	6.3
Strict Middling	7.2
Middling	8.1
Strict Low Middling	9.3
Low Middling	12.5
Strict Good Ordinary	15.6
Good Ordinary	18.3

FINENESS

(Micronaire reading)

Below 3.0	Very fine
3.0 to 3.9	Fine
4.0 to 4.9	Average
5.0 to 5.9	Coarse
6.0 and above	Very coarse

UNIFORMITY RATIO

Above 80	Uniform
75 to 80	Average
Below 75	Irregular

COEFFICIENT OF FIBER-LENGTH VARIATION

Below 27	Low variability
27 to 34	Average variability
35 and above	High variability

NONLINT CONTENT BY GRADE

(Upland cotton)

Good Middling	2.4
Strict Middling	2.9
Middling	3.7
Strict Low Middling	5.1
Low Middling	7.6
Strict Good Ordinary	11.0
Good Ordinary	17.0

NONLINT CONTENT BY GRADE

(American Egyptian cotton)

1	1.9
2	2.4
3	3.3
4	4.7
5	6.5
6	8.8
7	11.5
8	14.7
9	18.3

Are You Preparing *Now* For The Next Boom?

America's leading companies are not sitting on their hands waiting for the recession to end. They are planning ahead ***now*** for higher sales and near-capacity rates of operation.

These facts stand out clearly from the eleventh annual survey of Business' Plans for New Plants and Equipment just completed by the McGraw-Hill Department of Economics:

- **Manufacturing companies expect their sales to increase 20%, on the average, from 1958 to 1961.** Growth industries, such as chemicals and electrical machinery, expect gains of 25% to 34%.
- **If these sales gains are achieved, the average rate of operations in manufacturing will rise from 78% at the end of 1957 to almost 85% by 1961.** This is the point at which pressure on costs begins to mount, as less efficient facilities are pressed into service.
- **Industry is not waiting for this point to begin getting its plants and equipment in shape for the next boom.** Despite record expansion in the past several years, many manufacturing companies plan to add new capacity in each of the next four years. But, more important, they are going ahead with the vital job of modernization and cost-cutting.

In the years immediately ahead almost two-thirds of capital investment will go for modernization and replacement of present plants and equipment. In this way manufacturing companies can avoid the higher costs and the squeeze on profits that occur when producing facilities are not in shape to handle an increase in sales volume.

These are the plans, as reported to McGraw-Hill, of a wide sample of manufacturing companies—for the most part, large firms and leaders in their respective industries. Altogether, these firms account for almost 40% of all employment in manufacturing industries.

Now Is The Time

How do your plans measure up? Are you planning ahead now for a 20% sales increase in the next three years? Is your company planning to modernize its buildings and equipment more rapidly than at any time in the recent past? If not, here are some of the inducements

that McGraw-Hill editors report from their continuous checking on the state of business.

(1) **There are plenty of opportunities for increasing efficiency by the installation of new equipment and the improvement of layouts in plants, warehouses and offices.** Despite the installation of tremendous volumes of metalworking equipment in recent years, according to AMERICAN MACHINIST over half of the machine tools now in U. S. factories are over 10 years old. Replacement of worn-out and obsolete equipment will mean material savings in operating and maintenance costs.

(2) **Machinery, parts, materials and labor are much more readily available now than they are when the economy is running at full steam.** You can be more particular about quality and about specification to meet your own requirements.

(3) **With lower interest rates and less competition for loans, it is both easier and cheaper to borrow money to finance equipment and construction.** To wait for another boom is to run the risk of having to pay higher interest rates and look harder for money.

(4) **Although there is an adequate supply of most types of labor available now, the prospect is that the supply of factory labor over the years ahead will be tight.** In 1965, there will actually be fewer men and women between the ages of 25 and 44 than there are now. Good factory workers will be either hard to get, or wage rates will rise sharply or—more likely—both. The best answer is to anticipate the rise in labor costs by installing more efficient equipment to increase labor productivity.

(5) **Finally, the costs of investing in new buildings and improved equipment *now* are almost surely less than they will be later.**

These are some of the reasons why many leading firms find ***now*** the best time in years to start on a program of plant modernization. There are other good reasons in the many new products and processes coming from the boom in research and development. This year industry will spend over $8 billion on R & D—$1 billion more than in 1957. And a heavy share of the new product development will consist of better machines and processes to be made available during the next few years. Already the pace of technical advance is so rapid as to call for modernization of plants built only a few years ago.

Years of Opportunity

It has been said that the years between now and 1961 are the "middle years" between two booms. This does not mean a long period of recession, but a period of slower growth—a transition from the postwar boom based on deferred demand, to a new boom in the 1960s based on dynamic population growth and a revolution in technology.

If so, these are the years of opportunity for business—opportunity to prepare for the growth that lies ahead with the most efficient equipment, the most modern plant and the best production organization that can be devised. This is the way to fight higher costs and avert a resumption of inflation. This is also the way to ensure that your company will be ready for its new markets in the 1960s.

Are you planning ahead ***now*** to be among the leaders?

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nation-wide developments. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or parts of the text.

Donald C. McGraw
PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Textile World

Volume 108, No. 6, June, 1958

Mill Margins Signal UPTURN in BUSINESS

Mill margins of profit have signaled or closely coincided with all six major business turning points in the last 10 years

Latest figures available (April) complete a firm mill-margins signal that—

- **Mill production should turn up very soon**
- **General industrial production should turn up in September or October**

By P. M. THOMAS, Editor, TEXTILE WORLD

MILL MARGINS OF PROFIT are signaling a major upturn in business.

If cyclical patterns of business ups and downs that have held for the last 10 years hold this time, mill production should start its upward cycle within the next two or three months, and U.S. industrial production should follow in three to five months.

(Mill margins as used here are the difference between the cost of a pound of cotton and the average mill selling price of 17 standard gray-goods fabrics. Figures are published regularly by the U.S. Dept. of Agriculture and by the Dept. of Commerce.)

As shown by the charts, on the following page, the mill margins rate-of-change chart reached a bottom last November, remained level from November to December, and rose through the first four months of this year. Later figures are not available yet.

At no time during the 10-year period has such a decided and extended change in the mill-margins chart failed to signal or approximately coincide with a major change in the cyclical direction of mill production.

And at no time in the 10-year period has a major change of direction in the mill-margins and mill-production charts failed to signal a major change in the direction of general industrial production.

What the Charts Show

In the last 10 years, there have been six major turning points (three bottoms and three tops) in all three charts. Here's how the timing of the turning points went:

1949 Bottom

The mill-margins chart hit a bottom in January, and mill production bottomed in May, four months later. Industrial production reached a bottom in July, two months after mill production.

Industrial production had a small upward spurt and went to the July bottom again in October; but it didn't break through to a new bottom, and it promptly began the spectacular 1950 rise.

Timing: Mill Margins 0 (months)
Mill production +4
Industrial production +6

1950 Top

Mill margins hit a top in August, and both mill production and industrial production reached a top in December, four months later.

Margins and industrial production remained on a plateau for a few months, actually from the mill-margin high in August, 1950, until June, 1951. But during this period, mill production rounded off a smooth, slow top.

Timing: Mill Margins 0 (months)
Mill production +4
Industrial production +4

1952 Bottom

Mill margins hit a bottom in March, mill production in April, and industrial production in July. Both mill production and industrial production had an upward flurry in late 1951 and early 1952, but it was not the major cycle operating. They both went down again and began the major 1952-53 upswing only after mill margins turned up.

Timing: Mill margins 0 (months)
Mill production +1
Industrial production +4

1953 Top

Mill margins topped in June, one month later than mill production and industrial production, both of which topped in May.

However, the May-July upward spurt of margins was only a temporary fluctuation. This instance is the only one of such a sharp, short-lived spurt on the 10-year chart line.

Actually, margins had been in a rounding top for six

months prior to the spurt and were unmistakably signaling a major change of cyclical direction.

Timing: Mill margins 0 (months)
Mill production −1
Industrial production −1

1954 Bottom

Mill margins reached a temporary bottom in February, two months after the December, 1953, bottom in mill production and one month before the March bottom reached by industrial production.

Both margins and industrial production moved sideways for about two quarters. Mill production was straining upward, but no important upward movement started on any of the three chart lines until margins firmly bottomed out in September.

Timing: Mill margins 0 (months)
Mill production −2
Industrial production +1

1955 Top

Mill margins reached a rounding top in December, one month later than the November top in mill production. Industrial production reached a temporary top also in December, the same month as the mill-margin top.

Both mill production and industrial production reached a temporary bottom in July, 1956, and began a short-lived upward swing.

However, mill margins continued downward, signaling that the rise of the other two lines would not continue. As the charts show, the mill-production rise lasted for only three months and the industrial-production rise continued only five months. Both chart lines then began a fluctuating drop that is still continuing.

Timing: Mill margins 0 (months)
Mill production −1
Industrial production 0

Where We Stand Now

The real problem in reading charts is to recognize a firm turning point. Very often, what looks like a turning point turns out to be a temporary change of direction that quickly reverses.

As can be seen on these charts, the mill-margins line, being a rate-of-change line, is steadier than either the mill-production line or the industrial-production line, both of which are seasonally adjusted but are not rate-of-change lines.

Only on two occasions—early 1950 and early 1955—did the mill-margins chart seem to change directions and then reverse itself for an important continuation of the primary direction. The 1950 reversal coincided with the start of war in Korea, while World War II was still fresh in people's minds. And the 1955 drop was not a pronounced drop; it was little more than a leveling pause.

The present reversal, which began last December, has the earmarks of a firm major change of direction. If it fails to signal accurately an almost immediate turn in mill production, followed by a firm turn in general industrial production by September or October, it will be the first time it has given a wrong signal in seven turning points in the last 10 years.

Look in the Quill Can To CHECK LOOM PERFORMANCE

The contents of the quill can will often show the condition and performance of a loom. Weavers, loomfixers, and supervisors can look into the quill can and tell—

- If the loom needs repairs
- When bobbins are defective
- How long a loom has been idle

By WILMER C. WESTBROOK

FLAG A LOOM AND WATCH THE LOOMFIXER as he approaches it. Chances are, the first thing he does is to look into the quill can. Or watch the second hand and overseer on their daily round of inspection. The quill cans get as much attention from them as does the cloth on the looms.

Why so much attention to this receptacle of empty quills? What can be learned from a glance at its contents? The answer is simple. The quills that are ejected from the shuttle are a good indicator of the condition of the loom.

If there are a number of half-filled quills in the can, it is an indication that the shuttle is not boxing correctly. The fault may be in the picking motion, the drive, the shedding motion, or in the shuttle itself. It may be that a box plate or a checkstrap needs to be adjusted. The ejected quills show that something is wrong, and it is up to the loomfixer to locate the source of the trouble.

There's a Mispick for Each Quill

If all the filling has been run off the quills (except on straight non-feeler weaves), the fault usually lies with the filling feeler or the shuttle feeler. The loom should be stopped at once because each empty quill in the can represents one broken pick in the cloth. Broken or missing picks are a major defect in most fabrics.

A number of things can keep the filling feeler from operating correctly. The feeler blade or connecting wire may be bent, the feeler case may have been knocked out of alignment, or the shuttle may not be entering the box as it should.

Similarly, a bouncing or late shuttle can cause the shuttle feeler to block the transfer of filling. A failure to change quills before the filling is exhausted can also be caused by the shuttle feeler being set up wrong, sticking, or having some worn or broken parts.

Failure of the battery to revolve due to sticking or to an inoperative feed pawl can also prevent transfer for several consecutive tries.

Defective Bunches Cause Mispicks

Another thing that will cause empty quills in the cans is insufficient or defective bunch. The bunch should contain enough filling for at least six picks, or three round trips of the shuttle across the lay. If there is not enough yarn in the bunch or if it is not put on the quill correctly, the filling feeler may not operate soon enough.

Although the filling forks, both side forks and center, are designed to stop the loom when the filling breaks or runs out, they are not infallible. Often a tail of filling will be left across the fork well, the exhausted quill will be exchanged for a full one, and the loom will continue to operate. On side-fork looms, the right-hand fork is inoperative for a few picks immediately following a filling transfer.

Another thing that will show up in the quill can is broken or damaged quills. A transferrer that is not set correctly, a worn bunter, battery parts out of alignment, or an improperly boxed shuttle will cause damage to the quills.

Careless Weavers Can Be Detected

Full bobbins in the quill can may be traced to the batteryhand and weaver. An end carelessly passed over the thread guide or loosely attached may cause the filling to break on the transfer. Instead of removing the shuttle and rethreading the eye, many weavers simply cause the loom to eject the bobbin and insert another one.

Of course such action will cause a mispick unless the filling is matched. It will pay to do a little quiet investigating when the quill cans on a weaver's set contain a number of full bobbins.

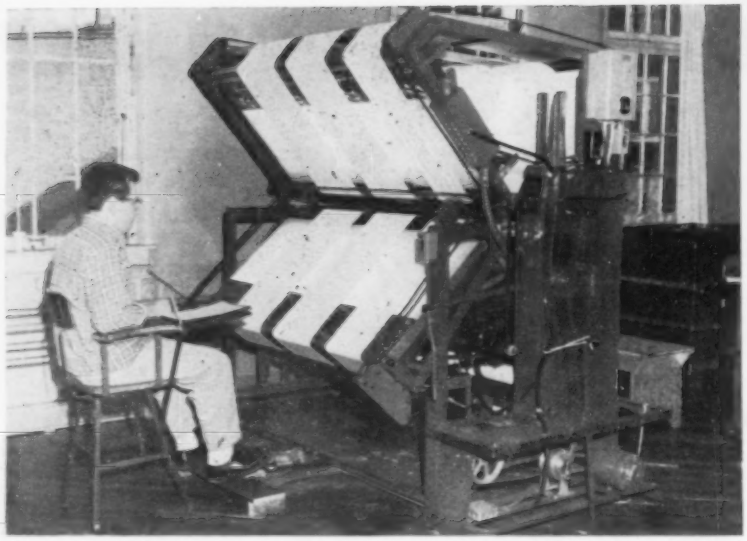
A glance into the quill cans will also tell the alert second hand something about the loom's current production, especially if the filling is coarse and a dozen or more quills are used by the loom every hour. Most looms have pick counters that show the production for each shift. But the counters are usually read only once a week, and a recorded shortage could have occurred at any time since the counter was last set back to zero.

Number of Quills Shows Time Lost

But if a loom has been stopped for repairs, a break-out, or a warp-out, the number of quills in the can, when compared to those of adjoining looms or to the known rate of consumption, will quickly show how long the loom has been inactive.

For instance, a loom is idle with the warp cut out. The second hand notices the loom and thinks the warp man is stalling. He checks the quill can and finds only a dozen quills in it. The loom uses a quill every four minutes when it is in operation. The second hand can easily find out how long the loom has been idle by checking the contents of adjoining cans or by learning what time the cans were emptied last.

So the habit of looking into quill cans is not as aimless as it appears. A good weave-room man can learn a lot from the contents of the cans on his job. It may take a bit of snooping and sleuthing; but the evidence, when found, will point out many faults of both loom and operator. Quill cans show up good or bad performance.



INSPECTING FRAME at Parsons & Baker Co. allows three pieces of fabric to be examined on both sides at the same time. Lights behind the fabric help the inspector to pick out faults easily. The fabric speed is controlled by a foot switch, and the fabric direction can be reversed.

INSPECTING MACHINE at Munsingwear, Inc., allows both sides of the fabric to be inspected at the same time. Inspector marks faults on a record to determine the knitting quality bonus.

Knitting QUALITY INCENTIVES Pay Off in Lower Costs

- Quality-control systems in underwear and outerwear knitting rooms are being supplemented by quality-incentive systems to keep operators on their toes
- No two systems are operated the same way, but the systems are relatively simple to install
- Here's a report on what mills throughout the nation are doing about quality incentives

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

QUALITY CONTROL in the knitting room of underwear and outerwear mills is receiving special attention these days. Increasing competition and the increasing trend toward testing finished textiles by competent technicians of the larger chain stores are forcing mills to install some system of quality control.

There is an increasing interest in quality incentives and systems of combining quality incentives with production incentives. Several mills have almost completed the installation of such systems, and one mill has a system running smoothly.

The constant trend toward more automation with machines that have more feeds and automatic devices has helped to lower quality standards. Quality control was not the problem 20 years ago that it is today because modern equipment tends to reduce knitters to mere machine minders.

Stop motions have been improved immensely over the last 20 years in an attempt to reduce faults from the faster-producing machines. Knitting-machine operators have, however, grown to rely too much on these stop motions. This equipment is not yet perfected to the stage where it substitutes completely for the human eye.

Tricot knitters have found photoelectric stop motions

TYPICAL REPORT made by an inspector shows the faults listed in categories so that the report can be analyzed by the foreman or fixer. Fabric yield or quality might be entered on the same report.

Daily Inspection Report Date 3/6/58

Roll No.	Machine No.	Knitter	Size	Style	Weight (lbs.)	Length (yds.)	oz. per yd.	Oil spot	Drop stitches	Bad needles	Machine holes	Press-offs	Run rips	Dirty lint	Total defects
4579	5	6	22	4583	285	125	3.0		"		III	/	/	/	5
4603	16	8	24	4501	245	106	3.7	/		"	III			/	7
4580	23	10	22	4583	28	124	3.7				IIII /	/	/	/	8
4572	8	6	18	501	212	100	3.2		/	"	II			"	7
4591	17	8	22	4583	291	126	3.7		/		III	/		/	6
4574	12	7	16	501	22	102	3.4	"		/			"		5

useful for scanning cloth while it is knitted on their machines. But this method is not practiced in circular underwear and outerwear mills because of the expense and the difficulties in scanning circular fabrics.

Workloads Are a Problem

The number of machines that an operator can tend before quality starts to deteriorate is an interesting problem. Most mills that knit cloth for sale pay their operators on an hourly basis. This pay averages about $1.25 per hr. in the South and $1.55 per hr. in the North.

These operators usually look after 2 or 3 64-feed jersey machines, 8 to 12 eight-feed rib machines, or 120 ends on spring-needle machines. Quality control is not such an important factor in these mills where the operators have ample time to patrol their allotted machines and constantly inspect fabric and yarn on the machines.

However, once a production-incentive system is installed, operators ask for more machines to tend. The request is usually granted. Machines are gradually added to the operator's workload until he or she may be tending 5 64-feed machines or 18 eight-feed machines.

This maximum workload depends chiefly on the ability of the individual operator, the condition and layout of the knitting machines, and the quality of the yarn. One Southern mill allows its operators to look after as many machines as they can handle safely without producing too much faulty work.

Workloads Are Based on Points

A North Carolina mill works to a system of points based on an ideal workload. Cloth styles, yarn sizes, machine cuts, stitch length, and machine feeds determine the number of points for each machine.

These points are based on timestudy reports, and a 20-cut 64-feed machine running 20s cotton jersey with 30 courses per inch may rate 25 points. The points are added to give as close to 100 points as possible for each operator.

Rib-machine operators are then paid by a production incentive on the weight produced. Jersey-machine operators are paid by the number of revolutions read from a three-shift counter at the end of each shift, because when yarn weights are heavy, the cloth weighs heavier and yet the operator does the same amount of work.

While no monetary incentive for quality is given, reports from the cutting room of excessive faults in the cloth are posted in the knitting room. Fabrics with more than one hole every 10 yds. are considered faulty.

Fabric in this mill is also checked periodically on the machine by a quality-control man. The fixer also checks the condition of each machine each day, and a report is sent to the superintendent at the end of the day.

Fixers in underwear and outerwear mills don't work on incentive systems. Although this idea has worked successfully in hosiery mills, variations are too wide in most underwear and outerwear mills to run successfully. Fixers, however, often work with the operators and sometimes will operate the machines while the operator smokes.

The practice of inspecting cloth over a lighted frame after it has been knitted is expanding. Some mills do this job on every roll, but most mills select a representative sample from each machine each day.

One mill that gives its cloth 100% inspection is Munsingwear, Inc., Minneapolis, Minn. This mill built inspecting machines that allow the examiner to check both sides of the cloth at once.

Each fault in the fabric is analyzed and recorded on a ticket. Each type of fault is awarded a bonus limit of 20% and 15%. If the limits are exceeded, no bonus is paid.

Pride Incentives Fail

Mills preparing quality incentives prefer to reward operators for well-done work rather than to punish them for faulty work. Several mills have incentive systems that work on the basis of pride in the operator's work.

These systems work well for a time; but when they have been in operation for a year or more, an operator adopts a "So what?" attitude when he constantly sees his name at the top of the list and loses interest.

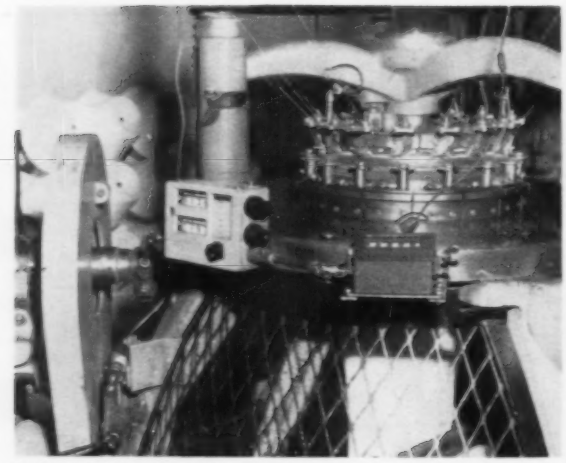
Mills that post operators' quality ratings usually have enough data to readily install a bonus system. One such mill inspects, measures, and weighs every roll of cloth.

These facts are entered on a daily report, and the number of yards per defect is calculated by dividing the number of yards produced by the total number of faults found in the day's production. The report is posted on the knitting-room bulletin board, with the name of the operator with the highest yards per defect at the top of the list.

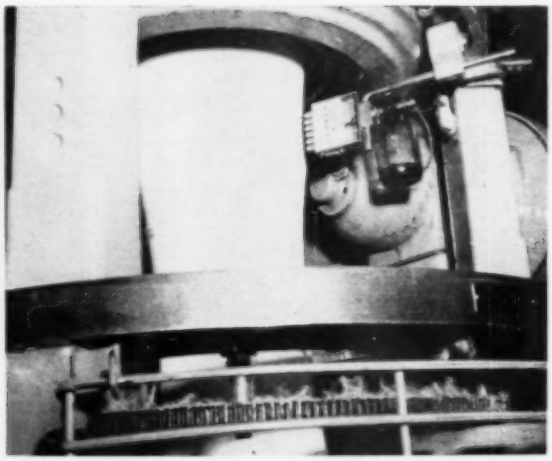
System Costs About $50

This system has been running for about a year, and the improvement in quality has been worth the $50 spent weekly in examining the cloth and calculating the results. Inspecting is done by a man with knitting experience who can easily differentiate between faults caused by the operator or by the yarn.

PLEASE TURN THE PAGE



REVOLUTION COUNTERS are the best method to determine production incentives. The counter at the right is a predetermined stop counter to check on fabric yield or quality.



STOP MOTIONS on knitting machines have been improved, but they do not substitute completely for the human eye. Operators sometimes rely too much on stop motions and neglect their work.

Operators are paid by an hourly rate, but a monetary quality and production incentive could easily be applied to this system with practically no extra cost. If the average production of all operators is 1,000 lbs. or 5,000 yds. per week, the basic production pay is worked out to 4 to 5¢ per lb., or just under 1¢ per yd.

A quality bonus can then be added to this pay by awarding a percentage of this payment based on the number of yards per defect. For instance, if an operator's record shows 118 yds. per defect, add 11.8% or 12% bonus.

The pay for an operator knitting 1,260 lbs. with 118 yds. per defect would then be:

$$1{,}260 \times 0.04 \times 0.118 = \$59.47$$

Pay records could be simplified by allowing a 5% bonus for 50 to 100 yds. per defect, a 10% bonus for 100 to 150 yds. per defect, and a 15% bonus for over 150 yds. per defect.

Revolution Payments Are Best

Some mills prefer to pay production rates by revolution records rather than by length or weight of cloth knitted. Knitted fabric is not easy to measure accurately, but machine revolutions are accurate. They are read easily, and allowances are made easily where rolls of cloth are knitted over two shifts. Revolution counters also have a good psychological effect because an operator can check his own production.

Parsons & Baker Co., Phoenixville, Pa., is experimenting with two revolution counters on each machine. One counter is a shift counter where revolutions are to be recorded for production payment purposes, and the second counter is a predetermined stop counter.

This latter counter is used along with the mill's quality-control system, and it also keeps the rolls to the same size for easy handling. The shift counter, located on the cylinder gear ring, is driven from the main drive shaft through a split bushing and a worm gear.

The second counter, which is also located on the cylinder ring, is driven from the first counter. The number of revolutions required to make up the desired length of the roll is calculated from the stitches per inch in the cloth, the number of feeds on the machine, and the gear ratio of the counters.

The calculated figure is transferred to the counter at the start of each cloth roll. The machine stops automatically when the desired length has been knitted. This length is entered on the knitting ticket.

System Shows Yield Record

When the roll has been weighed, the yield in ounces per yard is calculated. The weight is compared with the standard list, which shows the average and the high and

EXAMINING CLOTH is the chief duty of the knitter. He does this job more conscientiously with an incentive system. Fixers don't usually work on incentive, but they work closely with the knitter.

low allowances for each style. Knitting-machine fixers are warned about machines that are knitting heavy or light fabric, and the machines are adjusted.

Rolls that have suffered a press-off and rolls that are selected from a schedule are then inspected over a lighted frame. This frame was built in the mill to inspect three rolls at once, and both sides of the fabric are examined. The light is provided by fluorescent lamps encased in oblique frosted-glass frames.

Fabric is placed on sand rolls at the rear of the machine. These rolls are positively driven; so there is no pull on the fabric to stretch it. The fabric is run over the top of the machine and down over the top lights to the back of the machine, where it is run under the machine to the lower inspecting lights and back to the rear of the machine, where it is rerolled.

Machine Can Be Reversed

Each fault is recorded by the inspector, who sits at the front of the machine. The machine can be reversed so that the inspector can check faults more closely, and sections of the lighted frame can be blocked off when narrow fabrics are inspected.

Defects are translated into points. A 10-yd. fault counts as one point. Each operator starts the month with 100 points, and points are deducted for faults found.

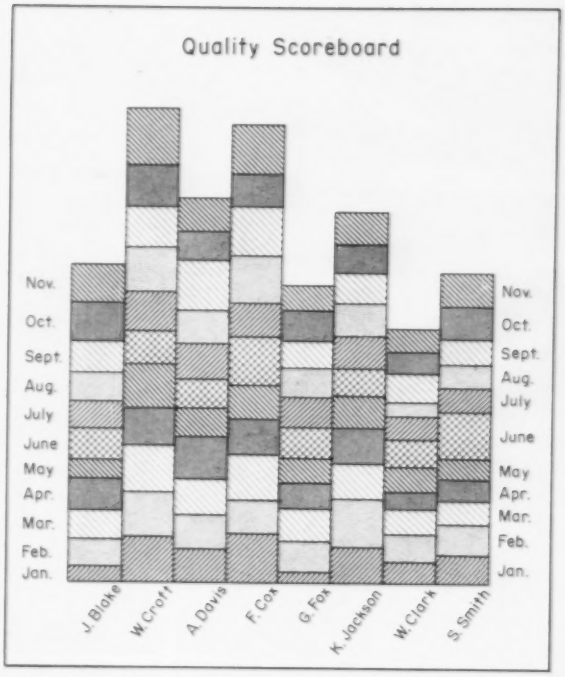
The chart in the knitting room shows the monthly progress of each operator. The points are added to each operator's column each month to form an easy-to-read scoreboard.

With a quality-incentive system, operators are apt to complain more about faulty yarn and inefficient machines. Both problems should be tackled before a quality-incentive plan is installed.

Yarns Should Be Tested

Some mills test the yarns they use for size, and one mill even sets the stitches per inch to the yarn number; but few mills check the yarn for strength, twist, slubs, neps, and other faults that cause imperfect cloth. Most mills do this checking while the yarn runs on the knitting machine and if faults are excessive, the spinner is usually notified.

A few outerwear knitters rewind yarn to remove bad knots, slubs, thin places, and other faults; but underwear knitters rely on the spinners to do a good job of winding. If the rewinding cost for 30s cotton yarn is 3¢ per lb. and the rewinding operation prevents ten faults in a 100-yd. roll, the savings would amount to about 70¢ per roll in addition to better fabric, fewer press-offs, and more-satisfied operators.



QUALITY REPORTS are hung on the bulletin board to show the monthly progress of each operator. This report is based on the inspector's findings, and points for faults are subtracted from 100. Columns are the cumulative scores for 11 months. The top block in each column represents scores for November; the second block represents scores for October; etc.

Some mills run a preventive-maintenance program to keep their machines in good condition. P. H. Hanes Knitting Co., Winston-Salem, N. C., for instance, completely overhauls machines when they have knitted 25,000 lbs. of lightweight fabric or 75,000 lbs. of heavy fabric.

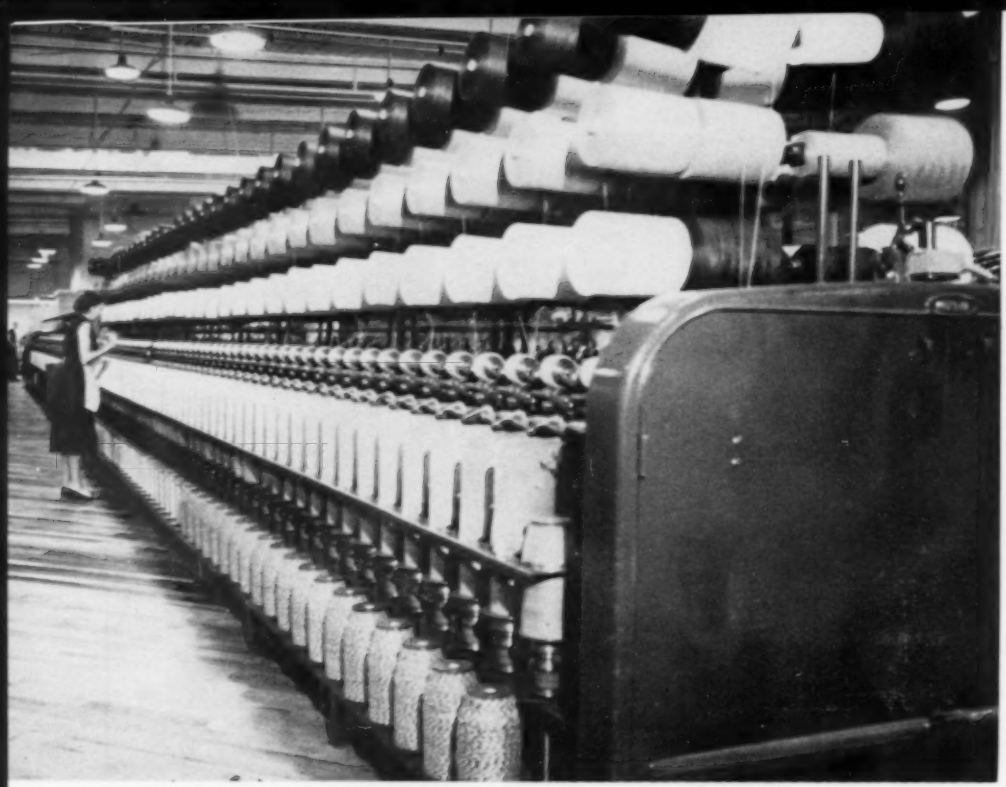
At these periods, needles are replaced, dial and cylinder slots are cleaned, the take-up mechanism is taken apart, and the cams are reground. Many faults are prevented by this type of maintenance program.

A good quality-control system is one that prevents defects before they have a chance to occur. Coupled with preventive maintenance, quality incentives should do much to cut costs and raise quality standards.

Monthly Quality Report — March

Knitter	No. of Rolls	Weight (lbs.)	Length (yds)	Defects	Yards per defect	Needles used
S. Smith	151	4,265	19,728	167	118	63
J. Robinson	140	4,002	18,896	172	110	72
F. Jones	160	4,230	22,050	208	96	60
W. Thompson	122	3,003	17,826	182	81	112
J. Jackson	136	3,800	17,232	216	80	86
M. Richards	72	2,112	9,525	158	60	38
R. Scott	152	4,110	19,431	360	54	128

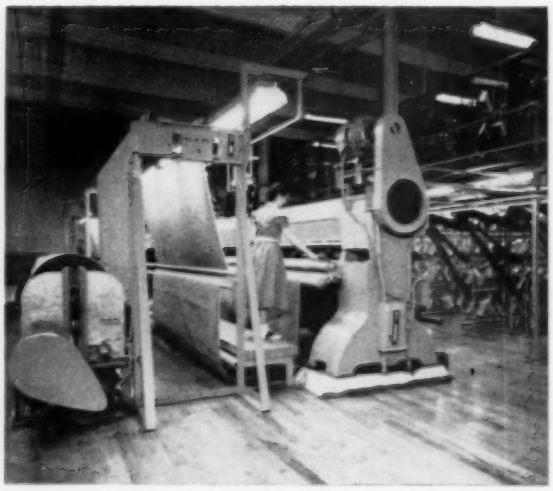
THIS REPORT, which also appeals to the operators' pride, can be easily adapted for a monetary incentive by awarding a bonus based on the number of yards per defect.



SOLUTION-DYED YARN is received in single-ply packages. It is twisted to three-ply yarn as the first step in manufacturing these tufted carpets.

Solution-Dyed Yarns Increase TUFTED-CARPET SALES

YARN WINDING follows the twisting operation. Bobbins containing 3 lbs. of yarn are wound to 6-lb. cones that go to the tufting machine.



TUFTED CARPETS from solution-dyed yarn are made on machines 12 and 15 ft. wide. The gauge is 1/8 and 5/32 in. for a full-pitch, closely tufted surface.

NEW FIBERS are growing in importance in tufted-carpet manufacturing along with continuous mechanical improvements of the tufting machines. As a result, tufted-carpet production recently passed woven-carpet production.

At a large Southern tufted-carpet mill, plain and patterned tufting machines are being used to make carpets from many fibers. Fibers being used at present are: blends of spun rayon in 2½s, 3-ply yarn; 100% spun nylon in 2½s, 3 ply; 100% spun rayon in 2½s, 3 ply; 100% cotton in 8½s, 4 ply; and 100% wool in 3/45s.

One of the newly developed fibers being tufted by this mill is solution-dyed lofted acetate, a heavy-denier continuous-filament fiber. At present four tufting machines are being used to make carpets with a luxury look from this fiber. Carpets are 9, 12, and 15 ft. wide.

The carpets are made in many solid colors and combinations of colors in plain, textured, loop pile, and cut pile.

A fast-selling model at present is a tweed carpet made from 2,200-den. yarn (approximately the size of 2.42s, 3-ply cotton yarn). The pattern is a high-and-low-loop bark texture. Another pattern in tweed is a cut-pile carpet.

The tweed carpets are tufted in many color combinations: medium beige, light beige, and white; dark brown, mint green, and white; dark brown, medium beige, and white; dark green, medium green, and white; and other unlimited combinations.

Another carpet being produced heavily is a solid-color loop-textured design in high and low pile with random shearing. A ⅛-in.-gauge tufting machine gives a full-pitch, tightly tufted surface. Colors include beige, sandalwood, jade, green, light gray, brown, and others.

New Patterns Result in High Sales

According to management men at the mill, sales are high on these carpets made from solution-dyed yarns because, "The carpets are resilient, are resistant to soiling, can be cleaned without pilling or shedding of pile, and are colorfast."

The plant is equipped to manufacture cotton and other spun yarn all the way from opening, and equipment will be installed soon to manufacture wool yarn.

But the first operation of solution-dyed acetate at the mill is in twisting. Twisting is done on 14 new high-speed twister frames added recently; usually only about three of the twisters are needed for solution-dyed yarns.

At the time of this writing, 27,628 lbs. of yarn was twisted in the previous 24 hrs. Higher twisting speed is expected when the frames are broken in.

The twister frames have 120 spindles. Rings are 6½ ins. in diameter, and gauge is 7½ ins. The front rolls are 3 ins. in diameter, and speed is 164 rpm. Traverse is 9¼ ins.

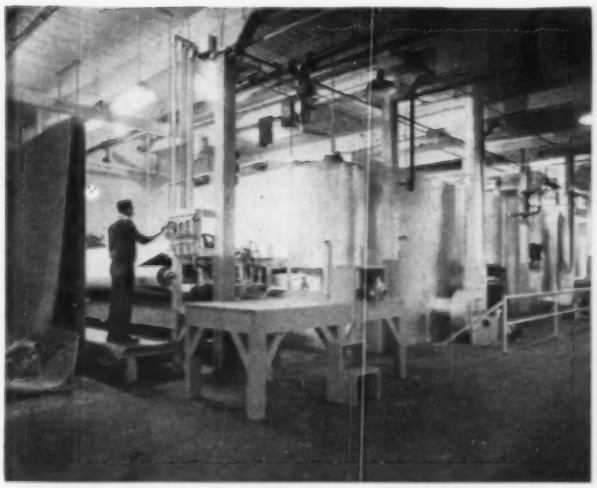
The top roll is covered with synthetic rubber; the bottom roll and front roll are steel. Rings are lubricated by automatic lubrication. At end breaks of a single-ply yarn, spindles are stopped with a single-spindle stop motion.

The three-deck-high, two-package-deep creel was designed and built at the mill. The rod thread guides and individual-end guides also were added.

CONTINUED ON PAGE 150

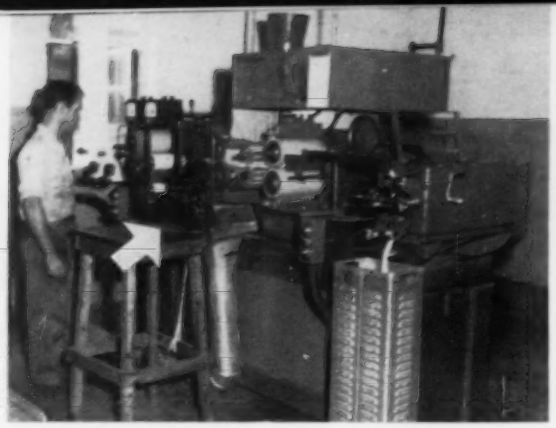
Technical data on solution-dyed carpets were furnished by Eastman Chemical Products, Inc. Pictures were furnished by Callaway Mills.

• One of the largest and oldest manufacturers of tufted carpets is increasing over-all sales with solution-dyed yarns. These lofted continuous-filament fibers are making carpets of many colors and designs. Here's how the carpets are made—



LATEX BACKING is applied as the back of the carpet passes over a roll that turns in a vat of latex compound. Then the carpet is cured in the oven.

CARPET INSPECTION under good lighting shows all defects that may be made in tufting or finishing. This carpet is a high-and-low pile design.



STAPLE BREAKER has a supplementary fan (arrow) mounted on a table to keep the rolls cool.

FIBER is set at 240° F. in the conditioning unit after it is stretched 58% at the breaker.

New Mill Combines WORSTED *and* COTTON *Machinery*

To take advantage of the market for high-bulk stretch yarns, Rhyne-Houser Mfg. Co., Cherryville, N. C., has set up a new mill to process any fiber from 1½ to 12 ins. long. Here's how Mill No. 3—

- Stretches and breaks filament
- Runs four processes of pin drafting
- Spins on worsted and cotton machinery

THE SHIFT FROM LONG-STAPLE COTTON to long-staple man-made fiber for fine yarns is responsible for a brand-new mill in the heart of the Southern combed-yarn area.

The new plant, Mill No. 3, Rhyne-Houser Mfg. Co., Cherryville, N. C., is set up to card and spin long-staple cotton, worsted, or man-made fiber. Emphasis is on worsted-type equipment preceded by a staple breaker and a converter. The converter primarily is used for blends of Dacron or nylon with wool.

From 18s to 40s yarn is made on the worsted system and 12s to 30s is made on the cotton system. Production is 15,000 to 18,000 lbs. per week.

Tow is broken into 7-in. lengths on the stapler after it is heated to 275°F. and stretched 58%. Some of the tow is broken twice, but Rhyne-Houser prefers to break only once because of the excessive fly generated by multiple breaks.

Half of the staple usually is relaxed in a fiber setter, and four ends of the shrunken yarn are combined with four ends of the relaxed yarn to produce a 56-44% blend by weight. The blending is done at the doubler.

The stock is then put through four pin drafters at 900 lbs. per 8 hrs.

The first pin drafter processes eight 150-grain ends at 1,500 drops per minute and delivers a 146-grain sliver. The second machine, eight ends up, delivers a 116-grain sliver; the third machine, eight ends up, delivers a 96-grain sliver; and the fourth machine, five ends up, delivers a 50-grain sliver.

Draft on the first three machines is 10; on the fourth machine, it is 9.7. Altogether, there are 2,560 doublings at the pin drafters. Evenness is 8 to 10% on the Uster tester.

Roving Is Made on Cotton Frames

The stock from the pin drafters is made into roving on 9-in.-gauge 10x5 cotton-system frames from which the clearers have been removed. Flyer speed is 500 rpm., front-roll (1⅛-in. dia.) speed 156 rpm., twist multiplier 0.44, and draft 12.

Special narrow roving buggies are used to haul the roving to the next process. The buggies have spring bottoms, and two of them hold a complete doff from one roving frame.

Gill flyers that blend long and short fibers are used for some mixes. Evenness runs 16 to 18%.

Nylon broken on the stapler is spun on five worsted spinning frames that can spin from 3- to 12-in. fibers. For the 7-in. fiber, 3-in. rings are used to make a 5-oz. bobbin. The 4-in. front rolls run 52 rpm., and spindle speed is 4,500 rpm. Draft is 18 and twist multiplier is 1.50.

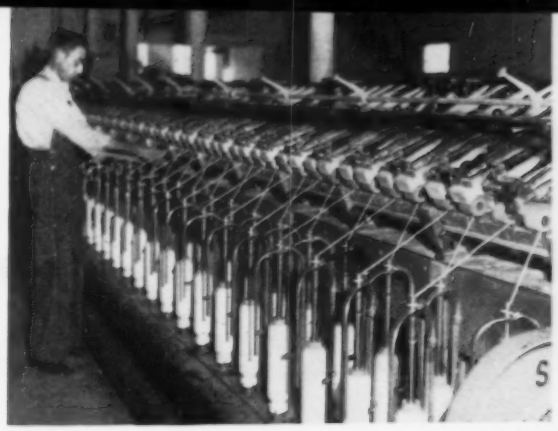
These frames are equipped with knee brakes that make piecing up easier. Ends down average 12 per thousand spindle hours. Spinners run 10 sides.

The frames, equipped with suction cleaning and umbrella creels, are cleaned at the doff. Doffing time for 32s is 4 hrs.

Ring Diameter Is 2½ Ins.

In addition, there are three worsted frames for use on Orlon and nylon

PIN DRAFTING is done in four processes that double the fiber 2,560 times.



ROVING is made on 10x5 cotton-system frames from which the clearers were removed.

staple from 2 to 9 ins. long. These 4-in.-gauge, 240-spindle machines have 2½-in. rings and are equipped with easily adjustable weights, revolving clearers, and umbrella creels.

For 3-in. staple, front-roll speed is 140 rpm. and twist multiplier ranges from 1.5 to 3.5. The frames draft from 16 to 26; spindle speed is 4,500 to 5,000 rpm. Doffing time is 4 hrs., and frames are cleaned at the doff.

Knurled Roll Is Removed

When 1½-in. or shorter fibers are spun, cotton-system frames equipped with Casablancas-type drafting are used. If these frames are needed for longer-staple fibers, the knurled roll is removed for slip drafting.

These 4-in.-gauge frames have 3-in. rings, and the front rolls are 1½ ins. in diameter. Spindles are driven by 10-in. ball-bearing cylinders.

For 15s to 22s cotton yarn, front-roll speed is 140 rpm., and draft is the same as the yarn number. Twist multiplier ranges from 1.50 to 3.50.

Ends down are 12 to 15 per thousand spindle hours, and evenness is 55 to 65%.

Rhyne-Houser twists and winds according to customer specification. Two-ply 21s nylon yarn made from 7-in. staple, for example, is twisted on 100-spindle frames equipped with 4¾-in. rings and a 9-in. traverse. Spindle speed is 6,000 rpm., and packages weigh 2½ lbs. each. Doffing time is 4 hrs.

Cones are wound at 600 yds. per min. and waxed at the winder. Tubes are made in Mill No. 2.

While Rhyne-Houser Mill No. 3 is now running mostly long-staple man-made-fiber blends, cotton-system cards and drawing have been installed and are available if the market should switch back to shorter fibers.

KNEE BRAKES on these worsted spinning frames help keep ends down to 12 per thousand spindle hours.

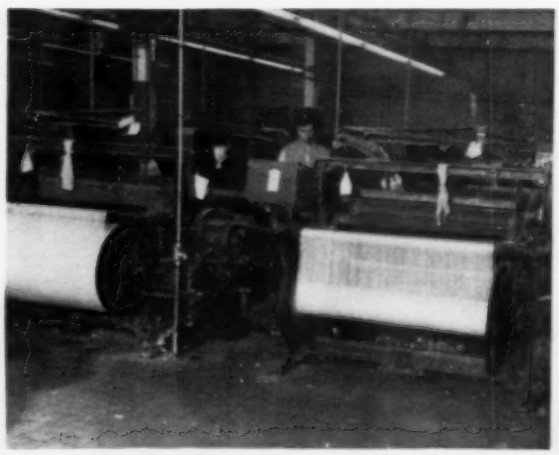
MIDDLE ROLLS are removed from cotton-system drafting assemblies when fiber over 1½ ins. long is spun.

Large Warps and Bobbins Aid CANTON-FLANNEL WEAVING

Only coarse yarns are used in weaving Canton flannels at Carolina Mills. To decrease yarn replacement, standard looms have been modified for 24-in.-dia. yarn beams and 8¾-in. filling bobbins. Results in weaving are—

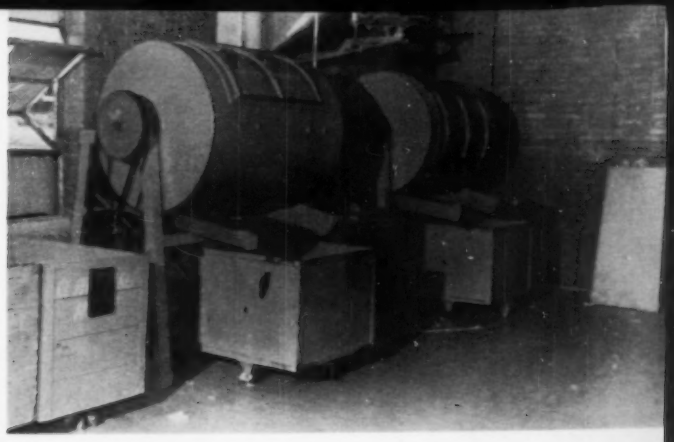
- 93% efficiency
- 3 to 4% seconds

BATTERYHANDS have 22 looms on 3s filling. They fill batteries on 37 looms on 5.40s filling.



WEAVERS have 48 looms. They clean filling grates, harnesses, and handrails on 16 looms each shift.

BOBBIN STRIPPERS were made in the mill machine shop. A stripper tumbles the yarn into one ball.



FILLING is taken from boxes with casters in warp alleys and placed in boxes on the looms.

CANTON FLANNELS woven at Carolina Mills, Inc., Mill No. 3, Newton, N. C., are in several styles of four-harness twills. Most patterns are three-up and one-down harness twills and are woven with Dwight harness motions and auxiliary cam motions.

The fabrics weigh 6 to 13 oz. per yd.; average construction is 10 oz. per yd. Warp ends range from 58 to 64 per in.; picks per inch range from 36 to 44.

Looms are 240 40-in. E-models operated as single-fork looms with feeler motions. Filling in all fabrics is matched at filling breaks. Loom speed is 170 ppm.

The looms have Roper let-offs. Motors are ¾ and 1 hp. All looms are placed on mounting pads.

Loom beams have 24-in.-dia. heads and contain from 1,650 to 2,200 yds. of yarn. Filling bobbins are 8¾ ins. long and average 2.3 oz. of yarn. The looms were modified at the mill for both these large packages.

Weaving Efficiency Is 93%

Weave-room efficiency averages 93%. At this production, 1,600 yds. of fabric are produced each hour. Second-quality cloth is between 3 and 4%.

Loom speeds and loom stops are checked on a regular schedule by the mill control department. Cloth-defect, quality, and weight reports are issued weekly by an engineer in the department who is in charge of the control of work and maintenance.

One shift foreman on each of three shifts supervises the weave room. Loomfixers have 80 looms and do not tie on any warps.

Warps are retied in the weave room with a portable tying-in machine. The tying-in machine operator leases out the pattern in the loom, cleans and greases the loom, and ties the warp and pulls it over.

Weavers have 48 looms and do their own smashing. Each shift, each weaver cleans filling grates, harnesses, and handrails on 16 looms.

Batteryhands have 37 looms on 5.40s filling on 8-oz. flannel. On 3s filling, batteryhands have 22 looms.

Employees Are Trained at Carolina

Practically all employees are trained at the mill. Two of the three loomfixers for 40 looms added recently were trained at the mill. One of these two loomfixers was hired as a cloth doffer. He later became a tying-in-machine operator and was then promoted to a loomfixer.

Weavers are trained from batteryhands. There's one filling hauler in training all the time. As the learner progresses with his job, the regular filling hauler spends his time doing other part-time jobs.

Filling is hauled from the quiller room in large trucks. The trucks are pushed down the warp-beam alleys in the weave room, and filling is laid into individual wooden boxes at each loom.

Eight Filling Numbers Are Run

Each box at the looms is marked with a ticket at the back to show what filling is being used. Since only eight filling yarn numbers are woven at present, there's little danger of mixed filling with this method.

Full yarn beams for warp replacement are stored in the weave room on the same two-tier steel trucks the beams are placed on when they are doffed at the slasher. The beams are lifted from these trucks with an electric hoist and are placed on small dollies that are rolled to individual looms.

The weave room is equipped with an air-changing system. Atomizers with pressures of 8 and 10 psi. supplement the air-changing system. Machine-shop employees maintain all humidification equipment. Temperature is 85° F., and relative humidity is 84%.

Building and Machines Are Clean

The weave-room floor was recently sanded with a Tennant machine and was painted gray all over with two coats of paint. Looms were cleaned and given two coats of loom-green paint. Now the floor and looms are kept clean easily.

A weave-room employee blows off 96 looms each day with compressed air. He blows off the drop wires, harnesses, and the loom at the back and front.

The weave room is mopped down overhead once a week. Every four weeks, the overhead area is blown down, walls are cleaned, and looms are cleaned.

Old fluorescent lamps over each loom are being replaced with 8-ft. fluorescent luminaires in continuous rows.

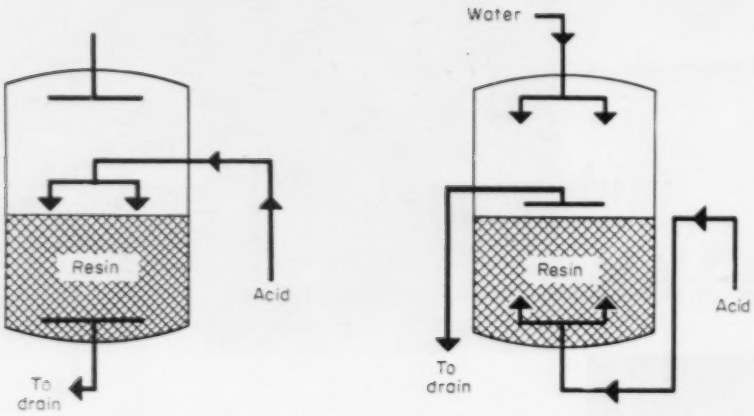


FIG. 1—REGENERATION of resin beds normally proceeds as at left, in a straight downflow operation. The counterflow principle at right is producing better results for one company.

Counterflow Regeneration Improves DEIONIZER EFFLUENT

- Getting a complete regeneration all through ion-exchange beds is not always easy when simple downflow methods of adding chemicals are used
- Here's how a modified counterflow system works to improve effluent quality and cut chemical costs

By PAUL H. CASKEY and T. P. HARDING

BETTER REGENERATION of cation-exchange beds can be accomplished by the counterflow method worked out by the Illinois Water Treatment Co. for the Omaha Public Power District, Omaha, Neb.

To get pure boiler-feed water, this plant had installed a two-bed duplex deionizer with an intermediate aerator. The exchangers are 11 ft. high and 108 ins. in diameter. The parallel cation exchangers originally held 315 cu. ft. of Nalcite HCR.

Clarified Missouri River water is the influent at this plant, and it contains about 25 grains per gallon of dissolved solids. About 40% of the cations are sodium ions. High acid levels are required to handle the high sodium-ion content, and the high calcium content makes acid reclamation impractical.

By using a high acid level of 11 lbs. per cu. ft. of deionizing resin, the plant was able to produce a satisfactory water varying from 25 micromhos at the start of the run to 566 micromhos at the end.

The deionizers at the plant were converted to use counterflow regeneration on the cation units, and one of

CONTINUED ON PAGE 152

From a paper presented at the American Power Conference, Chicago, Ill.

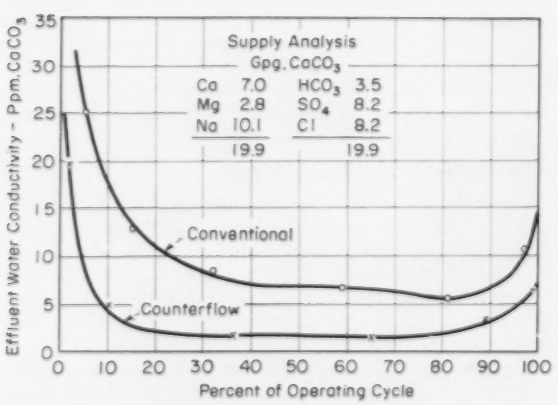


FIG. 2—TWO SYSTEMS COMPARED show that conventional system of regenerating produces treated water of less uniformity and somewhat higher conductivity.

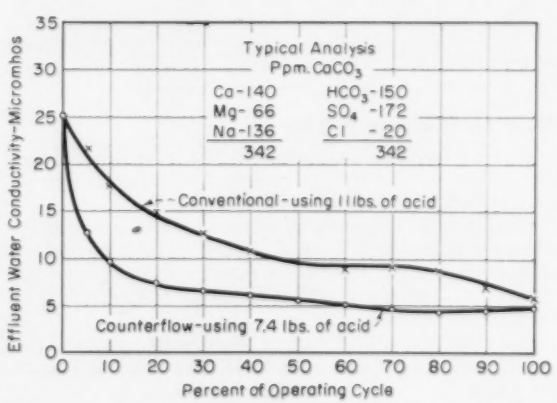
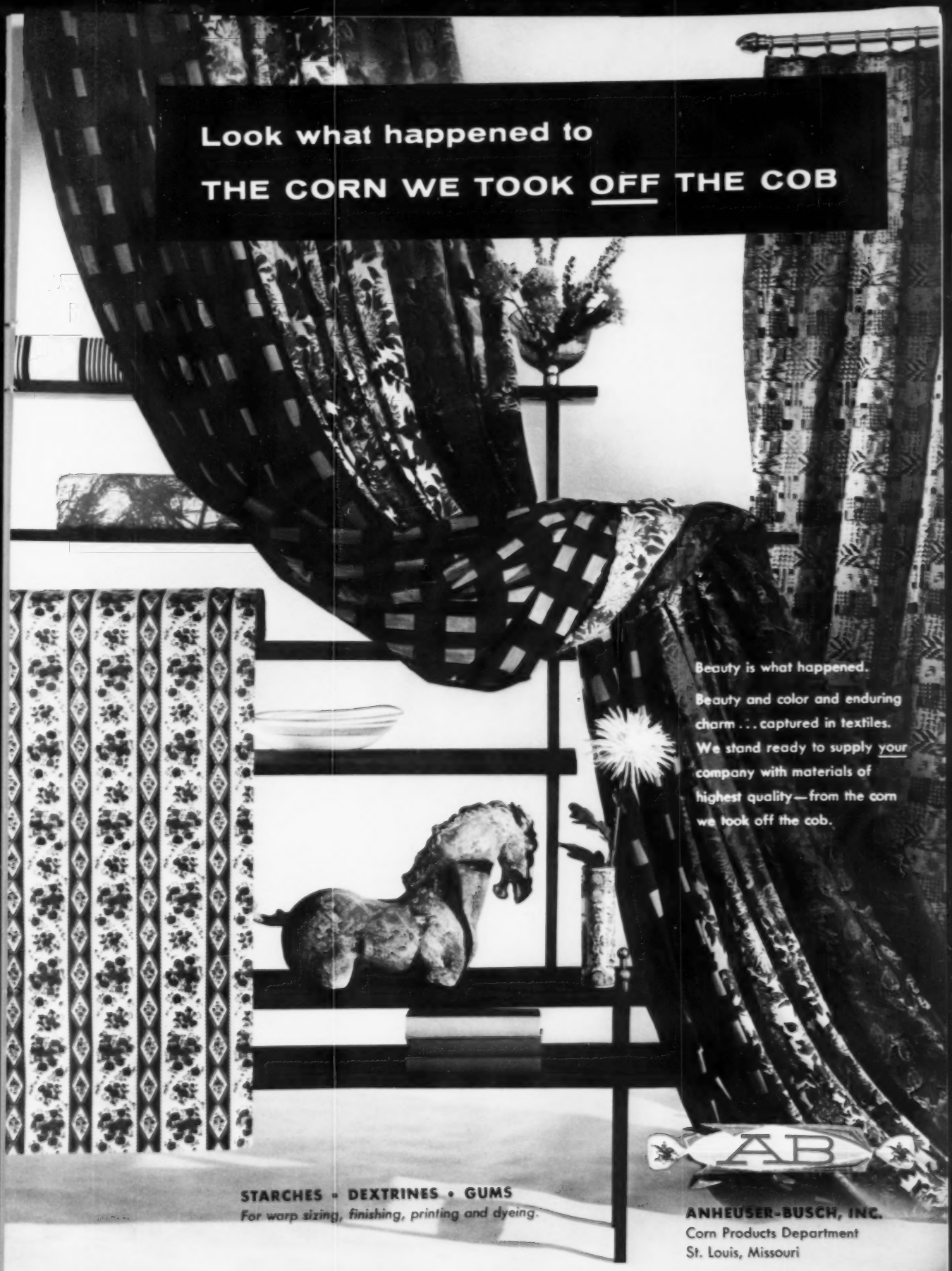


FIG. 3—LESS REGENERATING ACID is required for beds regenerated by the counterflow principle, and water condition is more uniform in this graph.

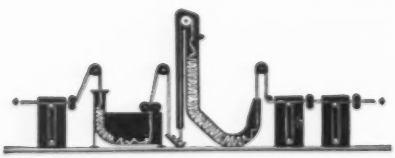

Look what happened to
THE CORN WE TOOK OFF THE COB
Beauty is what happened.
Beauty and color and enduring charm . . . captured in textiles. We stand ready to supply your company with materials of highest quality—from the corn we took off the cob.
AB
STARCHES • DEXTRINES • GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Corn Products Department
St. Louis, Missouri

• Bleached "rope" of cloth is spread out before trip to drying cans. (Inset) Mr. E. R. Rand (right), Dale Brook V. P., and Du Pont technical man, who worked with Dale Brook, compare samples of cotton goods before and after bleaching with Du Pont's Solo-Matic peroxide bleaching process.

DALE BROOK Finishing Company

INCREASES PRODUCTION 100%...CUTS LABOR COSTS 40%

using existing equipment and Du Pont SOLO-MATIC bleaching process



Du Pont's Solo-Matic process—the most advanced single-stage hydrogen peroxide bleaching process available.

"These gains were made without adding any costly new equipment, or losing any production during the change-over," says Mr. E. R. Rand, V.P. & General Manager of Dale Brook Finishing Co., Inc., Div. of Dubin-Haskell-Jacobson, Inc., Hohokus, N. J. "Common-sense technical service," he continues, "helped us make the change. The Du Pont representative worked closely with us and showed us exactly how we could switch to the Solo-Matic peroxide bleaching process, using our present equipment."

Du Pont's Solo-Matic peroxide bleaching process can offer *you* similar advantages with additional savings in steam, time and water, using your existing equipment. Or if increased production is not your problem, the Du Pont Solo-Matic process helps you maintain your present production levels in *half* the plant space required for conventional two-stage systems. If you plan to install new bleaching equipment . . . or alter your present setup...it will pay you to contact your Du Pont representative or write us at the address below for the complete Solo-Matic story.

DU PONT ALBONE®
hydrogen peroxide

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... *THROUGH CHEMISTRY*

ELECTROCHEMICALS DEPARTMENT
Peroxygen Products Division

E. I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington 98, Delaware

Improved Scour for Wool-Dacron Blends —

Worsted fabrics made of wool and Dacron can be scoured more effectively if the lubricating oils that are used to aid the spinning process are blended with a mixture of nonionic surface-active agents. The nonionics also help the scouring process if they are added directly to the fiber blend.

Research done by the Wool Industries Research Association, Leeds, England, also disclosed that wool-Dacron fabrics scour unevenly when portions are exposed to light.

Light oxidizes the lubricating oils, which then become more easily removed from the Dacron component. The effect is accentuated by increased exposure to light.

The state of oxidation of the oils apparently has no effect on their removal from the wool. Uneven removal of the oils in scouring produces streaky dyeings.

New Pigment-Dyeing Method —

Blends of fibers with unlike dyeing characteristics can be pad-dyed in solid shades by a method announced by Ciba Co. last month.

The process is based on pigments rather than dyes and is unique in that three different resins are used in combination to bind the pigments to the fabric.

Each resin performs a definite function in the binding process to control crocking, wetfastness, and resistance to drycleaning. The resins may be varied in quantity and proportion to suit the end use of the fabrics.

Application of the new range of 17 colors is by simple padding at room temperature followed by drying and curing. Because the pigments have no affinity for any fiber, dyeings are solid and even, and hydrophobic fibers are "dyed" as rapidly as cellulosic fibers.

The process is described as suitable for light to medium shades. The resin content necessary to produce good all-round fastness on very deep shades tends to affect the hand of the fabrics.

Tests Get Tough for Wash-and-Wear —

The American Institute of Laundering, Joliet, Ill., recently published specifications for wash-and-wear garments that must be met to get its Certified Washable Seal.

The test is based on 24 white-work launderings, extraction, and pressing on a hot head press at 100 lbs. pressure.

Reasons behind the increase in the number of launderings normally required for nonresin-finished goods is that wash-and-wear finishes tend to develop trouble between the 13th and 20th launderings. Shrinkage problems, off color, and strength losses increase as launderings progress.

The beefed-up test method has been made necessary because women are sending wash-and-wear garments to commercial laundries. AIL officials don't want to take chances with the reputation of the institute's seal of approval and have set up the new tests to protect it.

Strength requirements are set up to comply with end use. Dress shirts must retain at least 25-lbs.-per-in. tensile strength in the filling, while work shirts must meet a 50-lb. minimum.

Shrinkage tests taken before the first laundering and after the 6th and 24th launderings must fall within 2% for marked sizes or yard goods and 5% on garments marked small, medium, or large.

Whiteness retention is compared after 24 launderings with a standard white test piece that is free of finish and has been laundered 24 times.

Colored goods must meet the washfastness specification after six launderings.

Waterless Dyeing Predicted —

Water as a medium for getting dyes onto fabric may be well on the way out, according to Dr. C. E. Coke, Courtaulds (Canada) Ltd. In a report to CATCC, Dr. Coke said that research workers in England have found that N-butyl alcohol plus a small amount of water can be used as a dye-transfer medium for cellulosic fibers.

Water-soluble direct, solubilized sulfur, and some solubulized vat dyes when added to the N-butyl alcohol-water system exhibit extremely rapid uptake on cotton and rayon.

The pad-steam method developed in this country by Du Pont was also mentioned by Dr. Coke as a step in the same direction.

An added advantage of both systems is the possibility of continuous processing.

New Use for Molecular Sieves —

A current example of applying a new twist to an old idea is evident in Linde Co.'s announcement of the use of molecular sieves for locking highly reactive chemicals in place until their effect is wanted in a chemical reaction.

Molecular sieves aren't new. They are extremely porous clays or zeolites that can be dehydrated without destroying the crystalline lattice. The structure has a central cavity interconnected with the surface by channels of precise dimensions.

The dehydrated crystals will adsorb and hold polar compounds very readily. Materials that are used in the rapid curing of rubbers and resins are generally very polar in nature; so the molecular sieves make an ideal adsorbent for them.

The chemically loaded sieves can be used as latent accelerators and curing agents with natural rubber and a variety of synthetic latices, epoxy resins, rigid vinyl plastisols, and other materials.

Because of the delayed-action effect, chemically loaded sieves can be added directly to coating or backing compounds and worked at temperatures up to 250° F. without fear of premature catalysis or curing.

After the coating has been applied or the sheet has been formed, the temperature is run up to 307° F. and the curing chemicals are driven out of the molecular sieve to do their work.

Molecular sieves are now available carrying piperidine, di-n-butylamine, catechol, di-tert-butyl peroxide, and diethyl thiourea.

Linde Co., a division of Union Carbide Corp., has done the development work on this project and is marketing the loaded sieves through Harwick Standard Chemical Co.

Radioisotope Use Is Growing —

New uses for isotopes in textile processing were reported at a seminar held at Clemson College, Clemson, S. C. H. J. White, Jr., Textile Research Institute, reported that at present 50 textile organizations are licensed to use isotopes.

Recent work has shown that B-ray gauges can be used to sense the moisture content of fabrics as well as mass and can be applied to dryer controls.

Another interesting possibility, not yet practical, is the polymerization of resin finishes by means of high-energy radiation. Theoretically this is possible only where an unsatisfied valence is present such as a C = C bond, but actually resin complexes that are free of such double-bond linking have been partially polymerized by exposure to high-energy radiation at N. C. State College.

Exploratory work on graft polymerization of silicones to produce water-repellent finishes has shown interesting possibilities on a laboratory scale.

According to Mr. White the biggest obstacles to wider employment of radioisotopes at this point are cost of suitable laboratory facilities, necessity for trained personnel, and the difficulty of proving demonstrable value to an industry with limited funds for basic research. Facilities at the schools are available to industry on a fee basis.

Did You Know . . .

. . . **that the products of acid catalyzation of thermosetting resins** are different from those that develop when alkaline catalysts are used? Richard Steele told Fiber Society members last month that all acidic catalysts promote a cellulose-resin reaction product with good evidence of crosslinking. Alkaline catalysts won't insolubilize the resins as well as acidic catalysts and don't produce resin-cellulose links or cellulose crosslinks.

•

. . . **that glycerine added to a dye dispersion** increases color yield when the fluid-bed method of drying is used? Applications on Dacron, nylon, and acetate fabrics showed that when glycerine is used as a dyeing assistant, there were substantial time savings in the production of level shades that were fast to washing and crocking.

•

. . . **that the predominating decorator colors** for fall, 1958, will be various shades of yellow and green? The two colors were chosen in a vote of 1,500 members of the American Institute of Decorators. A popular accent color is burnt orange.

•

. . . **that furlike coats made with a Dynel-Orlon pile** can now be drycleaned successfully? By working with drycleaners and machine builders, Union Carbide Corp. has evolved an inexpensive method of restoring these fabrics to their original appearance.

When the coats were first marketed, only the more-expensive furrier's cleaning methods were recommended.

•

. . . **that menthane diamine** has proved to be of considerable interest as a curing agent for epoxy resins? Rohm & Haas is offering the product.

NEW DYES AND CHEMICALS

Ultraviolet Absorber

UV9 . . . absorbs the harmful ultraviolet portion of the spectrum of sunlight and thus materially reduces fading and loss of tensile strength in textiles or plastics. The product is being marketed in commercial quantities. Intermediates Dept., Organic Chemicals Div., American Cyanamid Co., Bound Brook, N. J.

Circle D-1 on Reader-Service Card

Coating Antifoamers

PV-45B and PV-48 . . . prevent foaming of emulsions of acrylics, polyvinyl acetate, latex, and other materials. The materials are used as received or may be diluted for use. Concentrations as little as 0.1% are effective, but the amount can be varied to suit specific applications. Hodag Chemical Corp., 7247 N. Central Park, Chicago 45, Ill.

Circle D-2 on Reader-Service Card

Antideposit Agent

Water Skipper . . . is a methyl tung oil-silicone compound that is designed to be used on drying cans, tenter clips, guide rollers, and other surfaces that come in contact with resin-finished goods.

The product now offered is improved over the original material and is supplied in 16-oz. aerosol cans that produce a pressurized spray. Treated surfaces will resist resin deposits for approximately one week. Textile Adjuncts Corp., 876 Pacific St., Brooklyn 38, N. Y.

Circle D-3 on Reader-Service Card

Cellulose Gums

Methocel 60HG, Methocel 70HG, and Methocel 90 HG . . . are water-soluble methyl-cellulose products offered in a wide range of viscosities from 50 to 15,000 cps. The products find use as emulsifiers or emulsion stabilizers. They are nonionic, and equivalent to Methocel U.S.P. in purity. Dow Chemical Co., Midland, Mich.

Circle D-4 on Reader-Service Card

Vinyl and Latex Compounds

Morpasol . . . brands a line of polyvinyl-chloride resins dispersed in plasticizers and supplied in a range of flexibility from soft through medium and hard types. They are water free and deaerated and fuse at approximately 350° F. to form films, coatings, or plastic bodies free of bubbles or flaws.

Morpalex . . . is a prevulcanized latex system that has improved light and heat stability.

Morpatex . . . is a latex especially designed for backing upholstery, rugs, and carpets. It is also a useful bonding agent in converting scraps of foam rubbers into useful molded states for packaging or cushioning. Morningstar-Paisley Inc., 630 W. 51st St., New York 19, N. Y.

Circle D-5 on Reader-Service Card

Fulling and Scouring Agent

S.D. 200 . . . is offered as a superior agent for raw-wool scouring, fulling and scouring of woolen and worsted piece goods, and scouring of rayons, acetates, and cottons.

The product is an amine-fatty acid concentrate, essentially 100% active, that is stable to hard water. When used with soap it prevents the formation of hard soap curds. Laurel Soap Mfg. Co., Inc., Tioga, Thompson, & Almond Sts., Philadelphia 34, Pa.

Circle D-6 on Reader-Service Card

Polyvinyl-Acetate Emulsion

Hartoresin NV . . . produces maximum stiffness and stability on cellulosic and man-made-fiber fabrics. The emulsion is recommended for snag-resistant finishes on hosiery and stiffening lace nets and as a bodying agent for resin-finished cotton goods. It is also useful as a binder in protective-coating applications. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-7 on Reader-Service Card

Disperse Dye

Eastman Fast Blue B-GLF . . . resists light and atmospheric fading and has excellent fastness to washing, perspiration, hot pressing, U.-F. resins, drycleaning, and sublimation. The color is recommended for acetate, triacetate, and polyester fibers. On polyester fibers, either carriers or high temperature may be used to produce the desired shade. Eastman Chemical Products, Inc., 260 Madison Ave., New York 16, N. Y.

Circle D-8 on Reader-Service Card

Direct Dye

Cuprofix Navy C-LW p.a.f. . . . is recommended for producing navy shades on cotton knitted fabric. When aftertreated, the colors produced will withstand repeated washings at 160° F. with soap and soda ash. Fastness to light, perspiration, and crocking are good. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Circle D-9 on Reader-Service Card

Resin Softener

Moropol 762 . . . is a nitrogen-free epoxy-type plasticizer recommended as an adjunct to resin finishes to impart increased tear strength and improve crease resistance of treated fabrics.

The product does not pick up or retain soil in laundering and can be considered to retain its properties for the life of the fabric. Moretex Chemical Products, Inc., 314 W. Henry St., Spartanburg, S. C.

Circle D-10 on Reader-Service Card

Wool or Nylon Dye

Capracyl Brown HR . . . dyes bluish-brown shades on spun nylon or wool and builds up well from pastel to heavy shades. The dye is suited to continuous dyeing of wool raw stock, from neutral or slightly acidic baths. Fastness and leveling properties are good. E. I. du Pont de Nemours & Co., Inc., Dyes & Chemicals Div., Wilmington, Del.

Circle D-11 on Reader-Service Card

Acid Dye

Benzyl Green F3G . . . dyes wool, nylon, or silk yellow-green shades of good fastness. The color builds up well, especially on spun nylon, and shows very good fastness to wet treatments, including washing or milling. Applicable in neutral or acidic baths, the dye withstands top chroming and can be used with Cibalan and chrome colors. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-12 on Reader-Service Card

Measure FABRIC TEMPERATURE with a Radiation Pyrometer

The radiation pyrometer has been adapted to sense and control the comparatively low temperatures that are used in heat-setting and resin-curing operations. The unit—

- Measures cloth temperatures without contact
- Can be set up to handle a variety of fabrics
- Is not affected by differences in fabric color

By **B. B. RITCHEY**, Minneapolis-Honeywell Regulator Co.

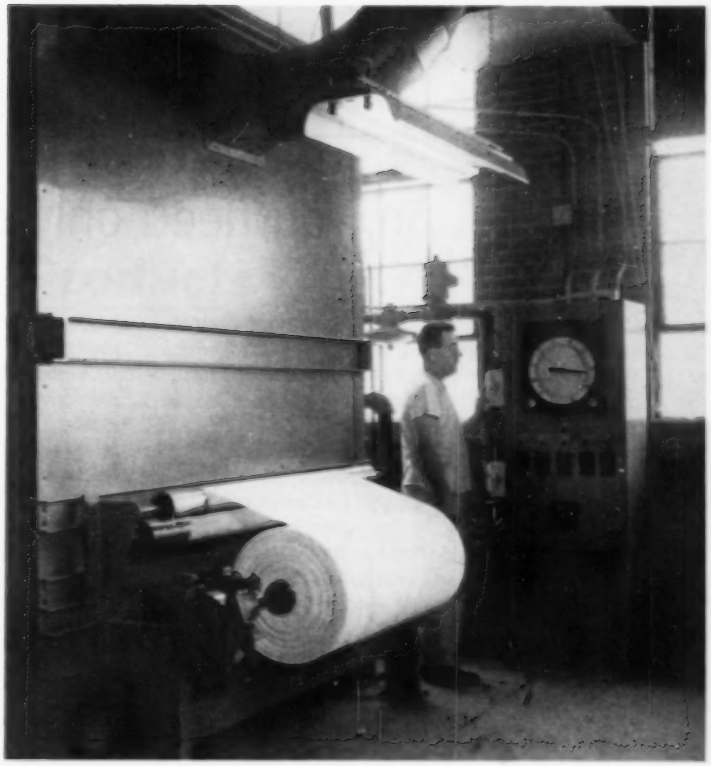
CLOSE MEASUREMENT and control of the temperature of moving textile materials is necessary today for economical processing without loss of product quality. Because today's dryer temperatures are higher, new resin coatings require curing at a specified temperature for a fixed time, and nylon must be properly heat-set to obtain some of its most salable qualities, the danger of damaging goods by excessive heating has become very real.

The most recent development in temperature-sensing devices for fabric-temperature control is the radiation pyrometer.

What's a Radiation Pyrometer?

A radiation pyrometer converts heat radiated from a fabric into a small electrical signal proportional to fabric temperature. To understand its operation, some discussion of radiant energy and its properties is necessary. All objects that are warmer than absolute zero (minus 459° F.) radiate heat energy. Conversely, all objects are capable of absorbing radiant energy from adjacent, warmer objects.

The amount of energy radiated from a body depends on its temperature, its composition, and the condition of its surface. In general, the more reflectance shown by a body, the lower will be the quantity of heat emitted because it will reflect rather than absorb heat. Thus, an object



ACCURATE CONTROL OF HEAT-SETTING nylon fabrics in this operation is obtained with a radiation pyrometer. The temperature is also indicated and recorded by the potentiometer.

No matter where you are . . .

With Morton, you need only one salt supplier

There's no need to complicate your bookkeeping, risk shipping delays and quality differences just for the sake of having two salt suppliers. There's really no "safety factor" in it, either. For plant managers and purchasing agents in every field of industry are finding that it pays to buy all their salt from one supplier—Morton. It not only assures you salt of uniform quality, but Morton, the only nation-wide salt company, offers you many advantages you just can't get elsewhere.

Service in 48 states. Only Morton has 9 salt plants, warehouses and sales offices from coast to coast. This means Morton can offer you complete salt service whether you have just one plant or several plants in different states.

Any kind of salt you need. Morton produces, refines and delivers nearly 100 different grades of salt to industry for 14,000 different uses. This means you can get expert, *impartial* advice on which grade or grades will do the best job for you.

Dependable delivery. Because Morton has mines, wells, and solar ponds in more than one location, Morton is better equipped to make delivery from alternate plants even under adverse economic or other conditions that might endanger your plant's continuous operation.

Complete technical assistance. Morton backs its salesmen with the services of its salt research laboratory, the most complete laboratory of its kind in the world. While your Morton salesman can help you solve many of your salt problems—everything from recommending a different grade of salt to helping you plan a water-softening system or put in or modernize a brine installation—he can refer problems he personally can't solve to a Morton field specialist for quick, thorough analysis.

We think you'll find it well worth while to order all your salt from Morton. For complete information, write:

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. 6-58, 110 N. Wacker Drive,
Chicago 6, Illinois

← For more data, write this page number on Reader-Service card.

For every production run . . .

keep your weaving schedules on time

with Clinton Products

For every warp-sizing job, you can rely on Clinton corn starches. These products yield sizes with uniform viscosity that produce the same results every time, because:

CONSISTENT FORMULATION MAKES CLINTON PRODUCTS RELIABLE

Three analytical control laboratories and several single-purpose testing stations are located at strategic points in our plant. They check every stage in the processing of *all* products . . . they check *all* finished products to be sure specifications are met exactly. That's why you can depend on Clinton products to do the job for which they are needed.

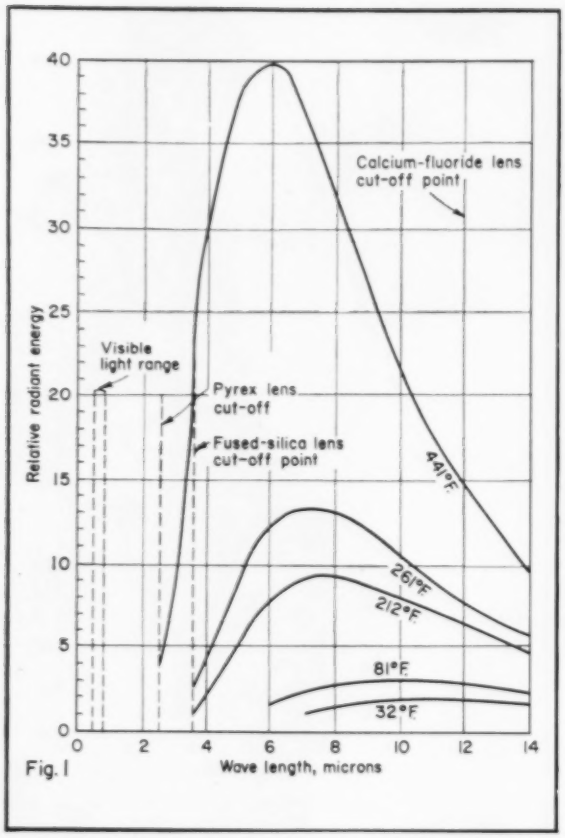
Your Clinton salesman can help you select the right starches to produce the sizings you want. And, should you need special production advice, *prompt* technical service is available when you need it. Call your Clinton salesman today, or write:

CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

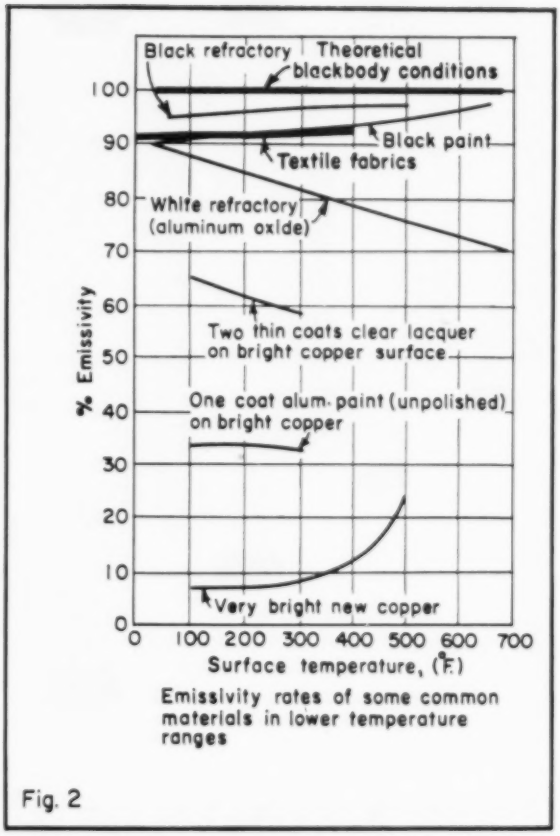
CLINTON

. . . Where research today improves tomorrow's product

For more data, write this page number on Reader-Service card. →



VISIBLE LIGHT WAVES fall considerably below the wave lengths that are encountered in low-range temperature measurements. Pyrex absorbs and re-radiates heat in the lower ranges.


Black refractory
Theoretical blackbody conditions
Black paint
Textile fabrics
White refractory (aluminum oxide)
Two thin coats clear lacquer on bright copper surface
One coat alum. paint (unpolished) on bright copper
Very bright new copper
% Emissivity
Surface temperature, (°F.)
Emissivity rates of some common materials in lower temperature ranges
Fig. 2

EMISSIVITY RATINGS of some common materials are shown here. At the lower temperatures, copper and a white refractory do not radiate as much as might be expected.

with zero reflectance will emit or absorb the greatest quantity of energy. Such an object is known as a blackbody and is said to have emissivity of 1.0 or 100%.

Because most common materials are not blackbodies and show emissivities of less than 100%, emissivity is usually defined as the ratio of radiant energy emitted by a body to that which is emitted by a blackbody at the same temperature. This measurement is often expressed as percent emissivity.

The radiant energy emitted at the low temperatures encountered in the textile industry is quite different from that emitted at high temperatures, including the visible spectrum (Fig. 1).

Personal experiences demonstrate this because you can feel radiation you cannot see. To confirm this fact and to mark a difference between low- and high-temperature radiant energy, take the case of a Pyrex baking dish. The Pyrex is transparent to both light and high-temperature radiation and therefore has a very low emissivity in that range.

But if that dish is heated to 350° F. during baking, though you can't see the radiation, you can definitely feel heat coming from it. In this range, Pyrex is actually opaque and absorbs radiation readily. Thus, at comparatively low temperatures, transparency to light is not a measure of emissivity.

Color Has Little Effect

Further, the visible color of a surface is obviously not an indication of its relative emissivity at low temperatures. Fig. 2 shows the emissivities of textile fabrics, several paints, and refractory materials. Notice that the black paint used actually has a lower emissivity than other colors in the 200 to 400° F. temperature range. However, dull or flat black paint is still a good emitter and is actually used as a reference standard in some cases.

Some data has been collected on the emissivity of sized cotton yarn while it is passing over a stainless-steel cylinder. The sets tested were 2,300 ends of cotton 9s at 260° F., 4,500 ends of cotton 30s, and 5,000 ends of cotton 45s, the last two at 250° F. The tests were made by sighting the radiation pyrometer first at a stripe of dull black paint on the cylinder and then on a sheet of warped yarn.

In all instances, the recorded temperature dropped less than 5° as the sighting of the unit was changed from black paint to cotton yarn. The color of the yarn made no apparent difference to the reading. Further, as was expected, the results were the same whether the yarn was moving or stationary.

Tests have also been conducted on various nylon fabrics with the result

that closely woven nylon fabrics show an emissivity of approximately 90% and should lend themselves very well to use with a radiation pyrometer. However, such open weaves as nylon net may not be measurable if too great a percentage of their actual area is open space, which does not emit radiation.

Fortunately, most textiles have a high degree of emissivity and for a particular type of product will not change enough to affect measurement.

Pyrometry Is Not New

Pyrometry has long been established as a temperature-measuring method in industries where the temperature ranges are high. To apply the principle to fabric-temperature control requires a unit that has been developed especially for the purpose.

Satisfactory results can be expected from this type of sensing head if:

1. Work temperatures lie between 100 and 600° F.
2. Emissivity of the surface sighted upon is reasonably high and remains relatively constant.
3. The temperature around the sensing element is below 120° F. or can be air cooled to this point.
4. The target area sighted upon is ample.
5. The pyrometer sees only the work—that is, any reflected radiation must be eliminated by shielding if necessary.
6. Excessive dust, smoke, or water vapor is kept out of the pyrometer line of sight. (Where these things are present in the line of sight, they can sometimes be eliminated by air purging.)

Even where all these conditions are not met, it is possible in some cases to use the pyrometer. For example, some users are measuring temperatures as low as 32° F.

Control Requires Three Units

The pyrometer system comprises three basic components: a low-range pyrometer unit, a reference-junction temperature controller, and a potentiometer. The latter may be any of the conventional strip- or circular-chart recording models with or without pneumatic or electric control.

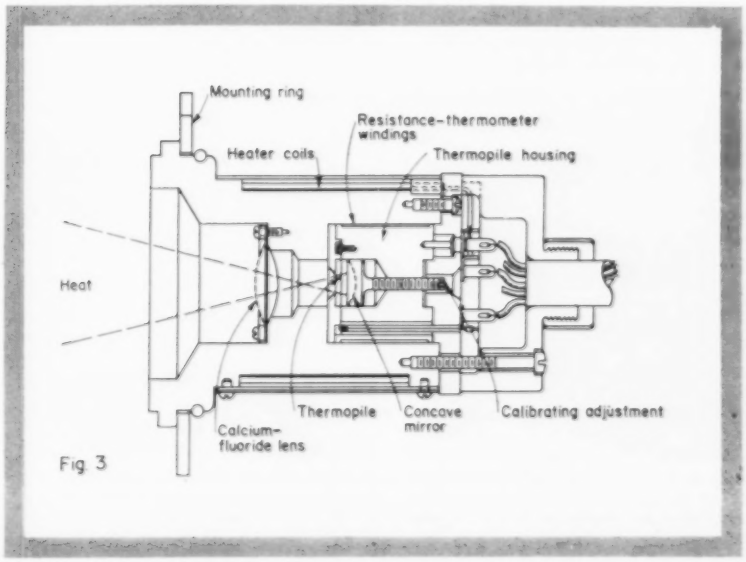
Operation of the system is as follows: Heat radiated from the object is focused by a lens upon the measuring junctions of a group of small thermocouples that create a minute voltage. This group of thermocouples is called a thermopile.

A potentiometer receives this voltage and amplifies it in the conventional manner to operate the recording pen and, if control is included, to actuate the controlling means, such as a mercury switch. In the control of nylon heat-setting, the choice of electric-control method to be used depends on the type of heating unit that is used. These control units proportion the electrical current to the heaters to maintain a constant tenter temperature within one or two degrees. Variable-speed drives can also be operated by suitable controls.

To eliminate the effects of ambient temperatures on the thermopile, a temperature-sensitive resistance winding and a heating element are included in the detecting unit. The reference-junction temperature controller operates from a resistance winding to control power to the heating element so that the head is maintained at a constant temperature. These elements are shown in Fig. 3.

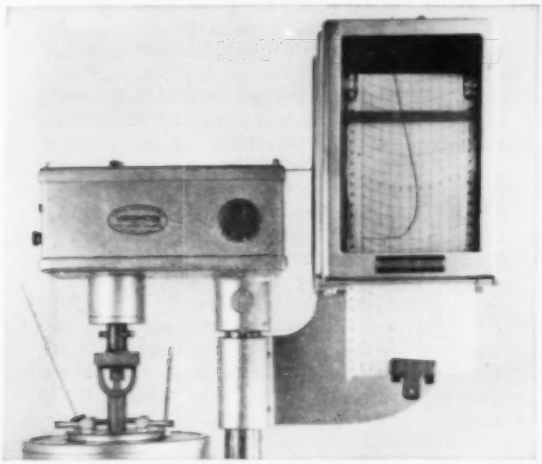
Thus, the unit is responsive only to radiation focused upon its thermopile. If ambient temperature at the head is higher than 125° F., the head can be cooled by air cooling or a water jacket.

Today, most applications of low range radiation pyrometers have been to nylon heat-setting and resin-curing operations. But this measuring system should be very useful in many other situations. Although general rules can be given for its adaptation to various measurement and control problems, specific application data will usually require a brief survey by a trained instrument engineer.



THIS SENSING HEAD concentrates heat radiated from hot fabric and directs it to the thermopile. The thermopile is linked with temperature-control apparatus.

Quick Course in Starch and Dextrin Buying



1. How does it rate on stability? Viscosity stability is a major factor in warp sizing, particularly under high-temperature conditions—and is essential for uniform added weight. This characteristic can be accurately evaluated with a Corn Industries Research Foundation Viscometer.

There are nearly 1000 different corn starches and dextrins on the market. Each one does a job. How can you be sure you're choosing the right one? The correct choice depends on many factors. Here's what to look for—how to compare various characteristics—and

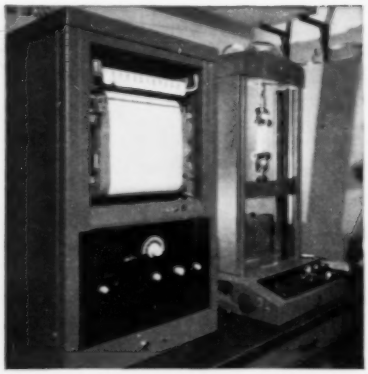
how to select the right starch or dextrin to do the job right!

Here are six of the more important tests for selecting the *right* starch or dextrin.

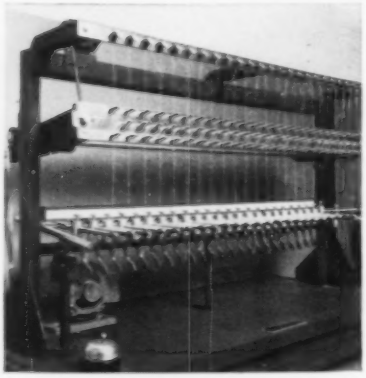
But whether you use these or other methods of testing, remember this: Staley's never-ending research and quality-control laboratories subject every type of starches, gums, dextrins to the most critical tests—not only the tests pictured here, but other demanding tests as well.

The result? A complete line of custom-made, uniform-quality products for sizing and finishing that meet your most exacting specifications.

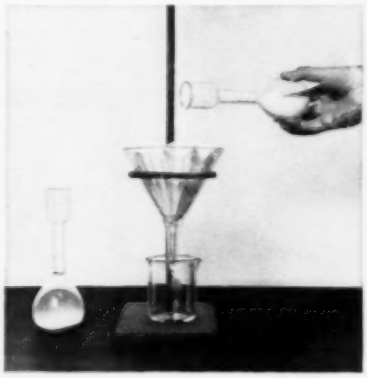
2. Is it the right viscosity? Proper size viscosity is important in almost every application and is a key factor in determining add-on for optimum weaving. The Scott Cup is one of the quickest, simplest, most efficient methods of checking viscosity.



3. What about tensile strength? Important too, is the effect of any treatment on the strength of yarns, fabrics. Tensile strength—ranging from delicate yarns to coarse, durable fabrics—may be determined with the "Instron" Tensile Tester.



4. How does it rate on abrasion resistance? The ability of a sized yarn to resist abrasion during the weaving operation must be carefully evaluated in choosing a starch. The "Walker" Abrader is widely used in this test.



5. Does it have the right solubility? Another important consideration in selecting the *right* dextrin is water solubility. This can be easily determined through a simple analytical procedure utilizing filtration and evaporation.

6. How does it rate on color? Generally, dextrins should be of good whiteness when they are to be used in finishing. Precise determinations of color present in dextrins are possible with the "Hunter" Colorimeter, shown above.

A. E. STALEY MFG. CO.
DECATUR, ILLINOIS

Atlanta • Boston • Chicago • Cleveland • Kansas City
New York • Philadelphia • San Francisco • St. Louis

BLUE RIBBON Softeners

SOROMINE AT—a white amphoteric softener which may be used both as a softener and a lubricant in thermosetting or thermoplastic resins. Fibers finished with SOROMINE AT have a pleasing full, soft hand.

SOROMINE AL—a white amphoteric softener combined with a special lubricant. It is recommended for improving the sewability and napping qualities of fabrics and threads. It produces a soft, full hand with outstanding lubricity which minimizes needle heating and fiber cutting.

SOROMINE CS — white cationic softening compound, produces a soft, supple hand on all fibers. It has good draping qualities and minimum yellowing properties on storage.

If you are not already using these superior softeners in your finishing operations, we advise that you try them. Send today for free testing samples and complete information on use.

From Research to Reality

ANTARA® CHEMICALS

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET · NEW YORK 14, NEW YORK

SALES OFFICES: New York • Providence • Philadelphia • Charlotte
Chattanooga • Chicago • Portland, Ore. • San Francisco • Los Angeles
IN CANADA: Chemical Developments of Canada, Ltd., Montreal

SOROMINE manufactured by General Aniline and Film Corporation, is sold outside the United States under the trade name of "BLANDOFEN."

For more data, write this page number on Reader-Service card. →

How Direct Colors DYE CELLULOSIC FIBERS

The theories behind the dyeing of cellulose have been given very serious study in the last 25 years. This article outlines—

- **How dye is adsorbed**
- **What makes for level or unlevel dyeing**

THE WORK DONE IN THE LAST 25 YEARS to establish what really happens when direct dyes are applied to cellulosic materials has brought practical benefit to the dyer.

The first systematic research into cellulose dyeing was associated with viscose rayon. The early production of rayon showed various degrees of dyeability, particularly with certain direct dyes.

It became apparent to early researchers that dyes that migrated well within the fiber and gave good exhaustion at low temperatures produced even dyeings. Dyes that required high temperatures for exhaustion often produced unlevel dyeings.

This empirical work sparked more serious research into the structure of the cellulose molecule and the relation between cellulose structure and the shape of the dye molecules.

The Theory of Cellulose Dyeing

Cellulose, like other textile fibers, is made of polymeric chains, linked by cellobiose units. The chains are packed together to form filaments. The molecular packing is not uniform, but the chains lie roughly parallel to the fiber axis. Closely packed areas are crystalline in nature. Where there is less compaction, the fiber is amorphous.

When a filament is wetted, water is absorbed in the amorphous areas, which are pushed aside by the water to form pores in the fiber structure. These pores form channels along which the dye molecules make their way during the dyeing process, entering and traversing the water-filled channels by a process of diffusion.

Direct dyes are azo derivatives that have solubilizing sulfonic groups and generally exhibit a long planar structure. The shape of the dye molecule contributes to substantivity on cellulose fibers. Direct dyes are the sodium salts of the sulfonic acids formed in their manufacture and are ionized in solution.

The ionization of the dye contributes considerably to the mechanism of dyeing. Solutions of direct dyes consist of a mixture of large and small bundles of dye-molecule aggregates dispersed in the solution. The molecules tend to aggregate together into tiny dispersed particles in which the sodium cations surround the dye anions; and if salt is present, the particle is surrounded by a layer of chloride anions.

The bundles of dye-sodium-chloride aggregate vary in size and form a colloidal electrolyte complex. The properties of colloids and electrolytes are both exhibited in a solution of a direct dye, which will gel, can be salted out, is thixotropic, and at the same time will conduct electricity.

Like other colloids, dyes in solution are affected by changes of temperature and the addition of more electrolyte.

How Dyeing Proceeds

Viscose rayon carries a negative charge on its surface, and so does the dye anion. It is obvious that in order to get the dye into the fiber, the repulsion between like charges must be reduced; and this is accomplished by the electrolyte, salt, present in the solution.

But salt affects the state of solution of the dye as well as its attraction for the fiber. This double effect is very important because in the first case salt initiates the dyeing process; but if it is present in too-great amounts early in the dyeing, salt causes the dye to form large aggregates at the fiber surface before diffusion into the fiber is complete. The result is unlevel dyeing.

In an ideal solution, the small aggregates enter the fiber and diffuse uniformly along the channels provided by the absorbed water. As the small aggregates leave the solution, the larger ones break up to maintain a dynamic equilibrium.

The dye molecules enter and become attached to the internal fiber structure. This attachment is responsible for the actual dyeing and exhaustion of the bath.

The four primary steps in dyeing involve wetting the fiber, adsorption of dye aggregates on the surface of the fiber, diffusion of dye molecules or small aggregates into the capillaries of the smaller fiber, and finally the formation of a bonded complex with the cellulose-chain molecules in the interstructure of the fiber.

How Variables Affect Dyeing

In an ideal situation, fiber swelling, dye diffusion, and final exhaustion proceed in an orderly fashion to produce level dyeings.

The dyebath conditions do not affect the swelling of the fiber. Viscose fiber is wetted immediately in the dyebath if it is not contaminated with hydrophobic materials. Electrolytes, other soluble matter, or temperature do not hamper the wetting process. Diffusion of the dye into the fiber is accelerated when the temperature is raised, and high temperatures promote levelness in the dyeing.

But the rate of adsorption at equilibrium is lowered at high temperatures. This statement may be puzzling to the practical dyer who knows from experience that some dyes go on better at high temperatures and others build up shade better at lower temperatures. Actually, the difference is one of diffusion rate, which varies very widely between dyes.

From a paper presented before the American Chemical Society by John Boulton

For example, a dye may reach equilibrium at 50° C. in 30 mins. to produce a dark shade, whereas if the dyeing is done at 95° C., the shade is much lighter and the dye is rated as a cold-drawing dye.

Conversely, another dye dyed at 95° C. will reach equilibrium in 30 mins. to produce a darker shade than when it is dyed at 50° C. This color is called a hot-drawing dye.

To the dyer, the dyes are quite opposite in their response to dyebath temperature; but actually they are behaving exactly the same as theory indicates except that one diffuses rapidly and the other slowly.

How Salt Affects Dyeing

As all dyers know, direct dyes are exhausted onto the fiber by adding salt to the dyebath.

The amount of salt added affects the amount of dye adsorbed onto the fiber, and there is a definite relation between the amount of dye present and the amount of salt used to drive the dye on the fiber. Research has shown that the higher the salt-to-dye ratio, the greater the substantivity of a given dye.

The ratio varies widely with different dyes. Some dyes require many times their weight of salt in the dye bath to get good exhaustion, while others will exhaust to pale shades with electrolytes provided by the water or dye-standardization diluents.

Dyes respond differently as regards speed of exhaustion when salt is added to the dyebath.

Salt does not increase the rate of diffusion to any useful degree; in fact it promotes unlevelness if used injudiciously. Some dyes are extremely sensitive to salt additions, while others exhaust smoothly and maintain good diffusion.

Bath Ratio Affects Exhaustion

As the liquor-to-goods ratio is decreased, the rate of adsorption of the dye increases. The total amount adsorbed is also increased if the dyeing proceeds to equilibrium. To the dyer, this means that when he is working with low liquor-to-goods ratios, his control of exhaustion is less and he must exercise greater care to get level dyeing.

Agitation of the bath also promotes faster adsorption of color; and in cases where yarn or fiber is closely packed, the effect of agitation is to produce surface dyeings. Leveling can come only if the inner fibers can be reached by fresh liquor. If the package or mass is readily penetrated, agitation of the liquor promotes level dyeing.

The diffusion-adsorption theory has been the subject of much work by many scientists. The concept that diffusion coefficients for a given dye and fiber are a function of the dye and electrolyte concentration in the dyebath has been substantiated to a considerable degree by the work of Crank and his associates. However, the constants arrived at satisfy only the Fick diffusion law and are not real constants.

Another concept presumes the presence of an electrical-potential gradient inside the fiber pores. Dye molecules diffuse in aqueous solution into the pore walls, where an electrical barrier must be overcome for adsorption to take place.

A variation on this theme is that the dye molecule must overcome the electrical potential barrier before it can enter the pore.

What all this means to the dyer is that the diffusion coefficient is dependent on a number of dyebath conditions, and we can recognize two:

1. Diffusion is continuously accompanied by adsorption, and the rate of movement of dye ions must be a function of the adsorption isotherme of dye molecules.

2. There are electrical effects that depend upon the ionic content of the diffusing dyebath and on the surface charge of the fiber being dyed.

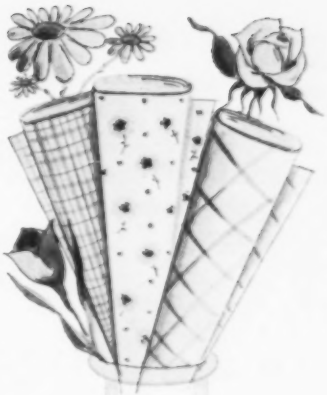
Here Are Two More Views

Another theory of dyeing supposes that the entire internal surface of the swollen cellulose fiber is spotted with active centers that attract the colored anions of dye with a force that varies as some function of the distance. This force is opposed by thermal agitation or intensified by the addition of electrolytes. By restricting the free movement of dye anions in solution, the electrolytes favor adsorption of the dye.

One other concept is that of Neale, who assumes that the dye solution within the fiber and the dye solution around the fiber are separate phases on each side of a membrane (the fiber-water interface). Classical Donnan membrane equilibrium treatment leads to quantitative relationships between dye adsorbed and concentration of dye, and added electrolyte.

Means of calculating the actual affinity of direct dyes for cellulose are as yet lacking, but relationships between the actual dyeing properties of dyes and the theoretical quantitative measure of affinity have been established.

The value of the work is that the manufacturer will be able to establish a relationship between dye-molecule structure and fastness properties, once a large number of dyes has been examined.



AROMATICS
for
TEXTILE
CHEMICALS

The chemicals process industry has made possible our many new and improved fabrics. In so doing it not infrequently leaves the undesirable side effect of obnoxious residual odor to disrupt employee morale and interfere with the final sale. Now, another section of the same industry . . . *industrial perfumery* . . . can remedy this defect and, in fact, turn it into a potent ally. The materials used for *dyeing, finishing, bleaching, cleaning, softening, plasticizing* can be masked and *reodorized* to give the end product a pleasant, sales-stimulating fragrance. The D&O Industrial Odorant Labs are providing such textile aromatics to an ever increasing group of "marketing-aware" manufacturers. Each problem is handled individually and in strictest confidence. Inquiries are invited.

Write for copy of article entitled "Aromatics In the Textile Industry"

"Essentially for you"

D&O
ESTABLISHED 1798

Our 159th Year of Service

DODGE & OLCOTT, INC.

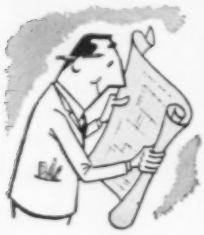
180 VARICK STREET • NEW YORK 14, N. Y.

Sales Offices in Principal Cities

Essential Oils • Aromatic Chemicals • Perfume Bases • Flavor Bases • Dry Soluble Seasonings

Using Salt Efficiently

by INTERNATIONAL SALT COMPANY, INC.



Making Automatic Salt Dissolvers from Existing Plant Equipment

A great many industrial companies and public institutions are now enjoying the benefits of pure, fully saturated rock-salt brine at remarkably little cost. They have found that expensive new equipment is not needed to make this brine! Instead, International has shown them how to convert unused or unproductive plant equipment into salt dissolvers that operate under the Lixate Brine-Making Process.

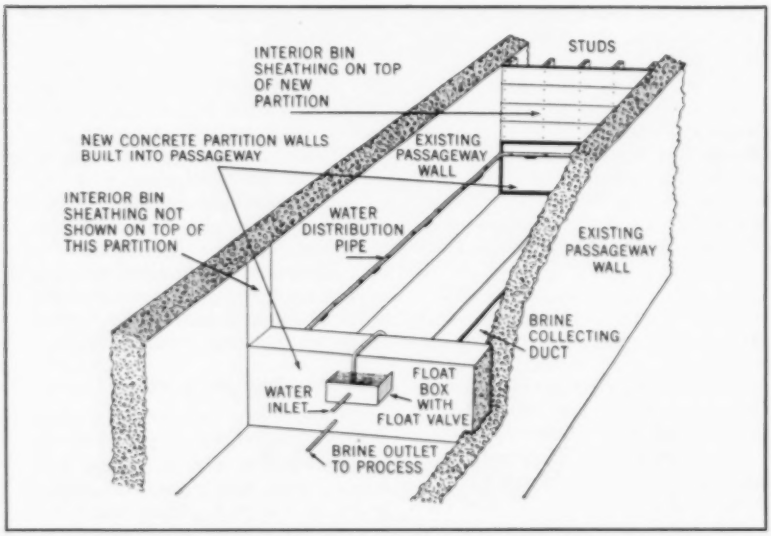
Here are four typical examples from the scores of special salt dissolvers that have been made from unused storage rooms, coal silos, locomotive tenders, dry salt bins, etc. These dissolvers, in addition to saving space, did not require expensive materials for their "construction."

Steel gas tank. Here, an unused circular steel tank under a sidewalk was converted into an underground Storage Lixator. (The Lixator is a rock-salt dissolver developed exclusively by International Salt Company.) This unusual Lixator is fully automatic, needs very little maintenance. Salt delivery is no problem at all: trucks dump Sterling Rock Salt directly through the loading hatches into the tank.

Dry salt storage bin. A few additions converted an existing dry salt storage bin into a rugged dual-unit Storage Lixator. Reinforced concrete was poured to make two 6-ft.-high salt-dissolving tanks in the bottom of the bin. Water inlet and brine discharge pipes, plus a few other necessary pieces of equipment, were installed . . . and the Lixator was ready to operate.

THE LIXATE PROCESS

. . . for making brine works like this: Sterling Rock Salt is stored in a tank called a Lixator. Water is admitted near the top. It flows *down*, dissolving salt as it goes. Soon fully saturated and unable to absorb more salt, this brine is completely self-filtered by the salt crystals in the bottom of the tank. The resulting Lixate Brine is exceptionally pure, clean, high in quality. As this brine is drawn off to points of use, more Sterling Rock Salt flows into the Lixator, and more water is admitted to produce more brine.


INTERIOR BIN SHEATHING ON TOP OF NEW PARTITION
STUDS
NEW CONCRETE PARTITION WALLS BUILT INTO PASSAGEWAY
EXISTING PASSAGEWAY WALL
INTERIOR BIN SHEATHING NOT SHOWN ON TOP OF THIS PARTITION
WATER DISTRIBUTION PIPE
EXISTING PASSAGEWAY WALL
BRINE COLLECTING DUCT
FLOAT BOX WITH FLOAT VALVE
WATER INLET
BRINE OUTLET TO PROCESS

SIMPLIFIED SCHEMATIC DIAGRAM OF A STORAGE LIXATOR BUILT INTO PASSAGEWAY WALLS

Unused basement area. A large industrial plant is now using a basement room to make clean, fully saturated Lixate Brine for water-softener regeneration. Here again, a reinforced-concrete tank makes the lower portion of the room into a watertight salt-dissolving and brine-storage unit. Dry Sterling Rock Salt is stored in the space above the salt-dissolving tank, and in the room directly over the Lixator.

Underneath a railroad trestle. One of the most dramatic Lixator installations is the conversion of the empty space under a railroad trestle. 70 ft. long, 18 ft. wide, and 12 ft. high, this extraordinary Storage Lixator can make thousands of gallons of Lixate Brine per hour. And salt delivery is entirely automatic: Sterling Rock Salt drops *directly* from railroad hopper cars on the trestle into the Lixator.

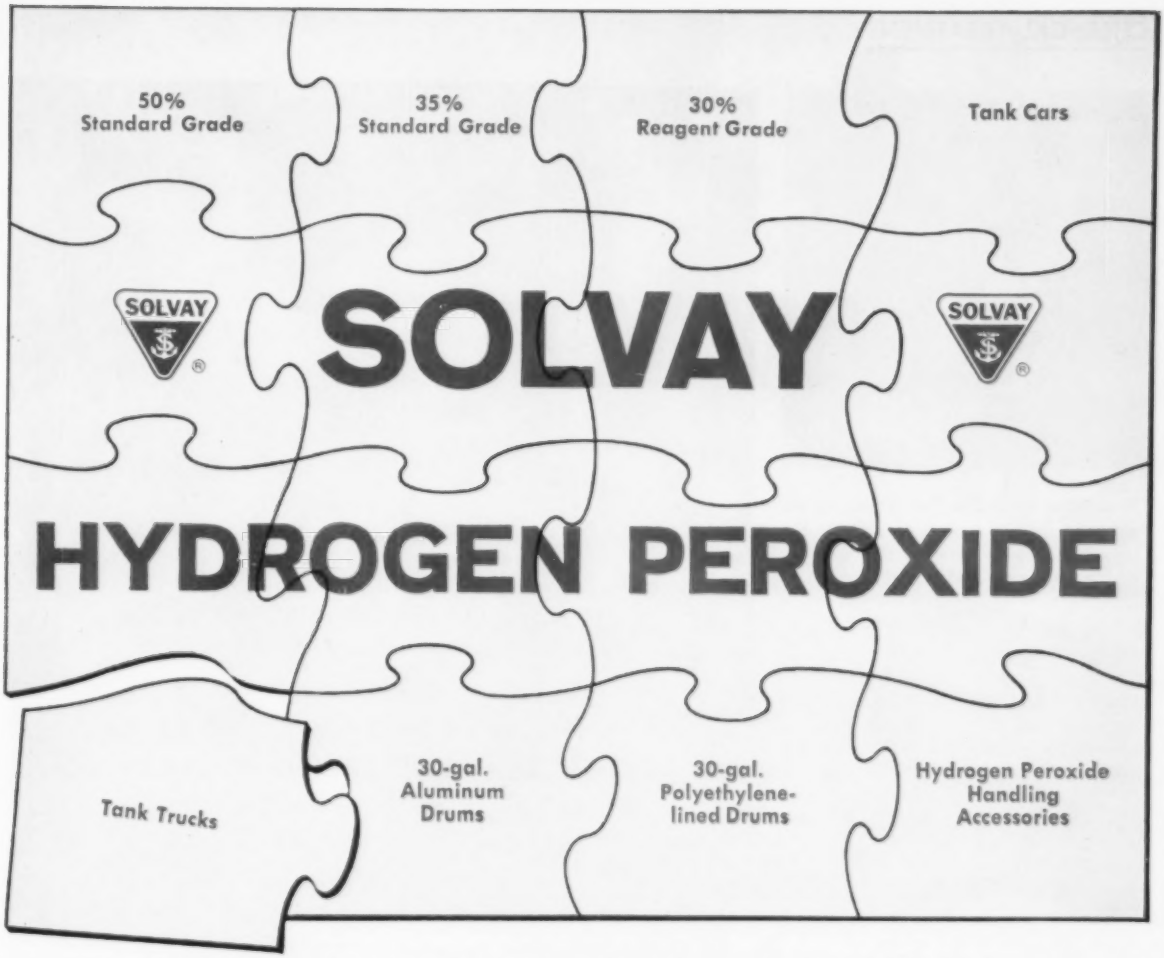
There are dozens of different Storage Lixators, converted, like the ones described here, from existing plant equipment . . . and tailored to the specific needs of each particular company. If your company could benefit from the conversion of unused space into a Lixator, be sure to contact International Salt Company. One of our experienced sales engineers can show you detailed plans of existing Lixators. He can also work with you to decide on the installation that will best meet your requirements.

To get this impartial technical assistance, contact your nearest International sales office, or write to us direct.

INTERNATIONAL SALT CO., SCRANTON, PA.
Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va.

Service and research are the extras in **STERLING SALT**
PRODUCT OF INTERNATIONAL SALT COMPANY, INC.

← For more data, write this page number on Reader-Service card.



. . . well-fitted to meet your needs

SOLVAY is prepared to supply you with hydrogen peroxide in either standard or reagent grades. The standard grades—both 35% and 50% strengths—are packed in 30-gal. aluminum drums, tank trucks and tank cars. The 30% reagent grade is packed in 30-gal. polyethylene-lined drums. SOLVAY is also prepared to supply special Hydrogen Peroxide Technical Service to help you in handling, storage or process applications.

Sodium Nitrite • Potassium Carbonate • Caustic Soda • Chlorine
Calcium Chloride • Sodium Bicarbonate • Ammonium Chloride
Caustic Potash • Chloroform • Vinyl Chloride • Methylene Chloride
Para-dichlorobenzene • Methyl Chloride • Cleaning Compounds
Hydrogen Peroxide • Aluminum Chloride • Ammonium Bicarbonate
Soda Ash • Carbon Tetrachloride • Mutual Chromium Chemicals
Monochlorobenzene • Ortho-dichlorobenzene • Snowflake® Crystals

SOLVAY branch offices and dealers are located in major centers from coast to coast.

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

Hydrogen Peroxide Dilution Data Book

Gives complete information on diluting SOLVAY Hydrogen Peroxide to the concentrations you need—plus important facts on handling, stabilizing, storing and analyzing dilute solutions. Mail coupon now for your copy!

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

Please send without cost your book, "Dilution of Hydrogen Peroxide."

Name_____

Position_____

Company_____

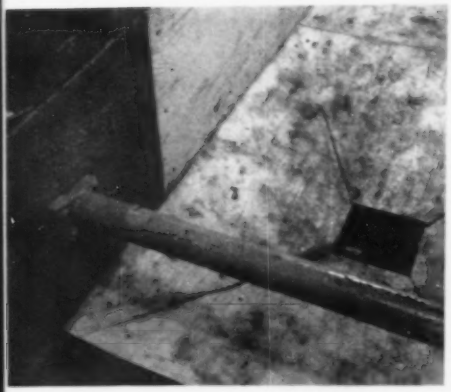
Phone_____

Address_____

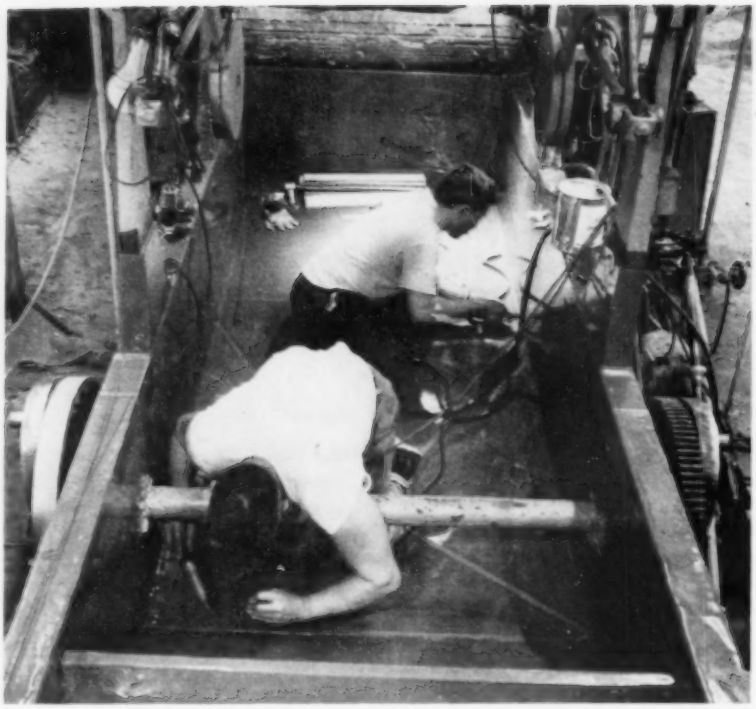
BW-68

City_____ Zone____ State_____

For more data, write this page number on Reader-Service card. →



PLYWOOD LINING is first placed in the old steel shell to form a support for the polyvinyl chloride. Severe corrosion is evident on the steel shell.



LINING IS WELDED by a hot-air blast from a special tool. Polyvinyl-chloride rods are used to build up the joint. Edges of tank are also protected with plastic.

PVC Used To Rebuild Peroxide-Bleaching Bowls

Bollman Carbonizing Co., Inc., Adamstown, Pa., has a continual problem with corrosion in its peroxide-bleaching and carbonizing ranges. Here's how it used polyvinyl chloride to put new life in old equipment.

Bollman Carbonizing Co., Inc., expects to realize longer life and lower maintenance costs from polyvinyl-chloride liners recently installed in a peroxide-bleach bath.

The problem of corrosion is constant in plants like Bollman's where weak sulfuric acid and peroxide solutions are much used.

The original liners on all equipment at the plant that comes in contact with corrosive solutions was lead. The metal has given generally good service, but as time goes on it develops pin holes and is subject to wear by abrasion.

Failure of the lead liner produced considerable corrosion in the steel outer shell of the bowls, often undetected until holes were eaten clear through the shell.

How the Tank Was Lined

When the old lead liner was removed from the peroxide-bleaching tank, the steel shell was first thoroughly cleaned and painted.

Corrosion had so pitted and roughened the surface that an interliner made of marine plywood had to be applied to provide a smooth surface for the support of the polyvinyl chloride sheets.

When the wooden liner was in place, polyvinyl-chloride sheets were cut to fit and mounted against the plywood.

All joints were self-welded with heat and polyvinyl-chloride rods. The PVC was bent and formed over the tank edges to protect them from splashing of corrosive liquids.

Costs of the repair job compare favorably with relining with lead, including the plywood interlining. If the steel shell had been in better condition, the expense of interlining would have been saved.

The job on the 12x4x2-ft. tank was completed in two days by two workmen.

ACID ALIZARINE BLUE B

Fast Mordant Blue B
Pr. 93

ACID ALIZARINE BLUE B is an acid mordant dyestuff producing full and bright Navy Blue shades, adapted for the dyeing of men's wear, uniforms and ladies' dress goods. Silk effects are left reserved.

In addition to its unexcelled light fastness, it is excellent to milling, washing, potting and decatizing. Due to its level dyeing properties, it is used extensively for the dyeing of piece goods.

HARSHAW

Reply to
ZINSSER DIVISION
Hastings-On-Hudson 6, N. Y.

THE HARSHAW CHEMICAL CO.
Cleveland 6, Ohio

← For more data, write this page number on Reader-Service card.

Fabric wall covering provides beauty and utility with Dow Latex in the coating.

Dow Latex makes fabric wall coverings easy to clean, durable, colorfast

Fabric wall coverings available in many new designs and colors.

Let Dow Latex help you meet today's big demand for wall coverings that are as durable as they are decorative!

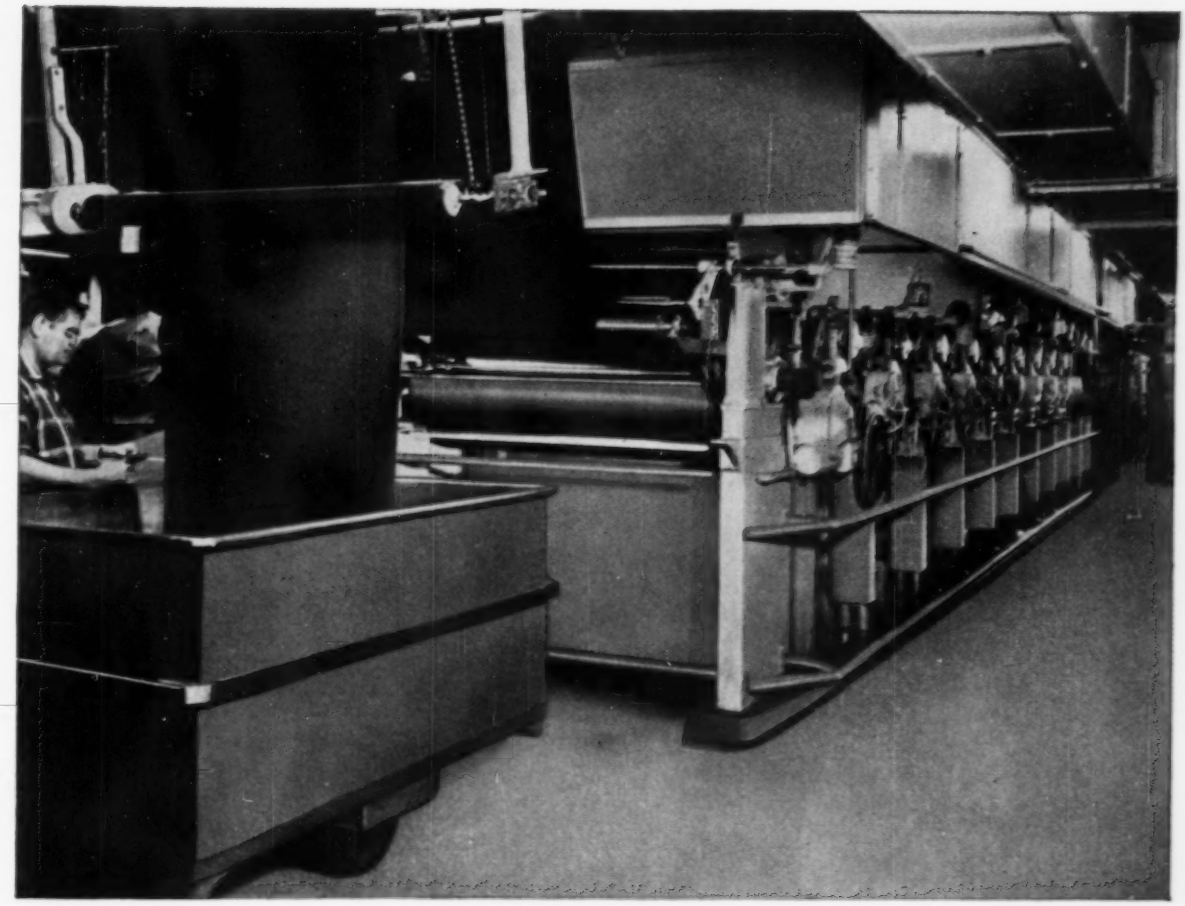
With Dow Latex you'll find it easy to overcome shortcomings in the fabric substrate and improve printability and embossability. Here is the coating that makes wall coverings easy to clean, durable and colorfast . . . without introducing problems of aging, paste resistance and adhesion to the fabric. Best of all, with Dow Latex it costs you less to add the features that clinch sales.

A Dow Latex may be the answer to your textile coating problems. Call your nearest Dow sales office or write today to THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Dept. 2168B.

LATEX T.M.

YOU CAN DEPEND ON DOW

← For more data, write this page number on Reader-Service card.



ANOTHER LEADER LIKES LYKOPON

Both Union Bleachery, Greenville, S. C., and LYKOPON, the Rohm & Haas concentrated sodium hydrosulfite, are known throughout the textile industry as leaders. Founded fifty-five years ago, Union Bleachery has a reputation for high quality finishing operations. One of the oldest firms of its kind in the South, it is also one of the most modern in equipment and facilities. LYKOPON, for its part, was the first sodium hydrosulfite to be produced in this country. Over the years it has earned the confidence of leaders among finishing mills, including Union Bleachery. Uniform strength (94% minimum guaranteed, as shipped) and unusual freedom from dusting underlie the reputation of LYKOPON for quality. LYKOPON probably can be used with profit in your particular operation. May we show you how?

Chemicals for Industry

ROHM & HAAS COMPANY

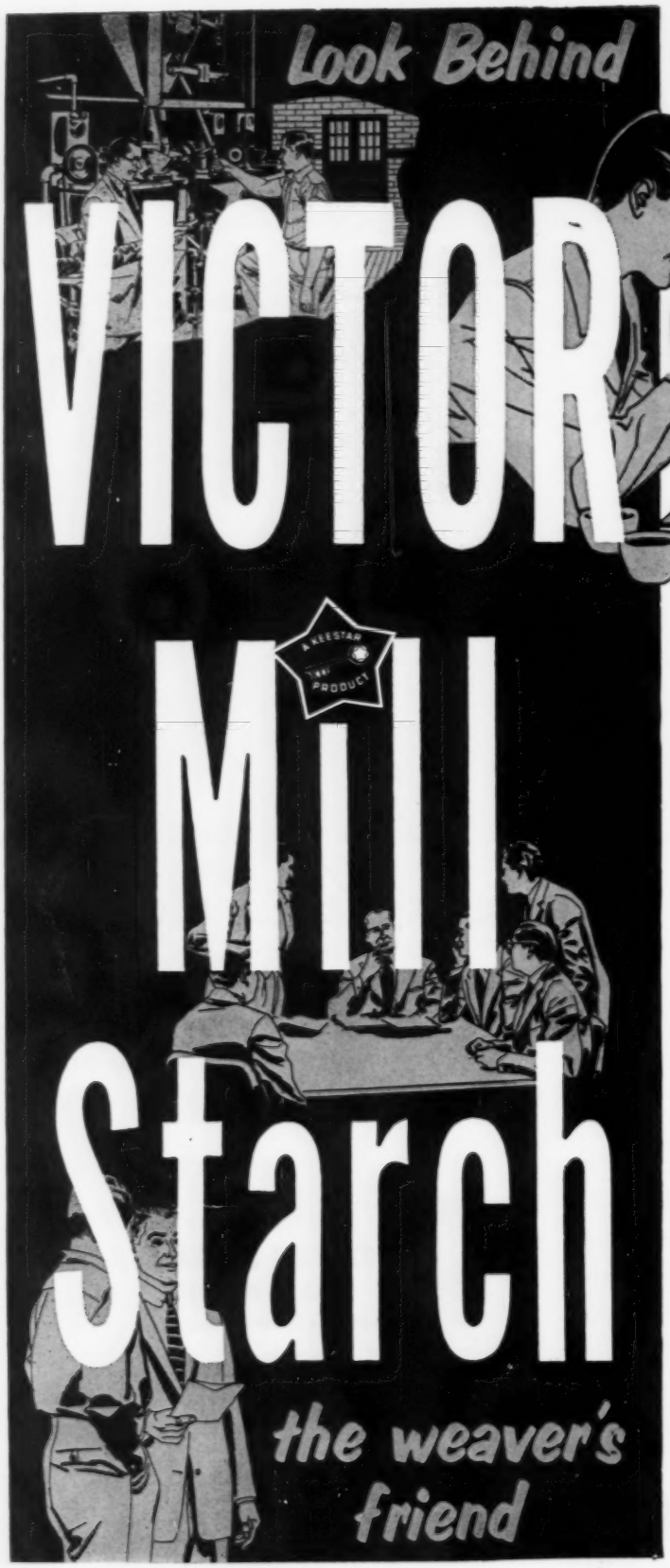
WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

LYKOPON *is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.*

LYKOPON

For more data, write this page number on Reader-Service card. →



Your Problems Are Our Success

Victor Mill Starches are so noted for uniformity, they are a recognized aid to uniform slashing operations. But that alone can't explain the big preference for Victor Mill and other Keestar products.

Keever goes beyond "delivering the goods." Each sales-service man knows the textile industry. He is a trained specialist in mill problems. He consults with you all down the line utilizing the collective experience of nearly 40 associated textile engineers, chemists and technicians.

The success secret of Keestar products lies in the men who make them – and serve you on the job.

THE KEEVER STARCH CO.
General Offices – Columbus, Ohio

Processors of corn, wheat and blended starches for industry since 1898

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1500 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

← For more data, write this page number on Reader-Service card.

Announcing . . .

the new revolutionary

Speed-Tex RING

by SACO-LOWELL

PAWTUCKET SPINNING RING DIVISION

No Other Ring Like It!

Shortest Breaking-in Period . . . Highest Traveler Speeds!

(over)

The Speed-Tex* RING
by SACO-LOWELL

A Revolutionary Development in Ring Design!
Offers the Shortest Breaking-in Period of Any Ring!

The Saco-Lowell Speed-Tex ring offers the shortest breaking-in period of any known ring. It retains all outstanding Pawtucket qualities — ultra-smooth finish, close tolerances, long life.

The shortest breaking-in period is caused by a new surface metallic alloy. The alloy *is not* intended to remain unchanged — the traveler gradually alters the finish. Invisible after a short time, traces of the alloy in the traveler path aid in providing longer traveler life.

The final finish of the Saco-Lowell Speed-Tex ring is obtained at low temperatures which do not soften the initial case hardness of the basic steel ring. A softer ring would break in satisfactorily, but would have a short life.

Actual mill tests show only 4 or 5 traveler changes are required for complete breaking in, compared to 50 to 100 traveler changes for conventional style rings. The Saco-Lowell Speed-Tex will give consistently, ring after ring, high traveler speeds, the longest life, and the shortest breaking-in period of any ring available today.

TYPICAL INSTALLATION

Yarn, Warp—20.5's
Ring Size—3" Diameter
Spindle Speed—9,000 RPM
Traveler Speed—7,069 FPM
Traveler—
Victor No. 2/0-X2D-191 HRW

Traveler changes during breaking-in period:
No. 1— 1 hour
No. 2— 20 hours
No. 3— 48 hours
No. 4— 96 hours
No. 5—120 hours
Traveler life—120 hours thereafter

SACO-LOWELL Speed-Tex MODEL 01C

Higher Traveler Speeds Than Ever Before!

This exclusive Saco-Lowell ring reaches a new high in large package spinning speeds. Special flange contours permit traveler speeds never before attained. The inner flange, bearing surface of the traveler, is full width to provide a wide, steady traveler path. The outer flange, not a true bearing surface, has been sharply reduced in width.

A wider traveler may be used without changing its total weight. A special wider traveler, developed by the Victor Ring Traveler Division of Saco-Lowell, is also elliptical with a small circle resulting in a low center of gravity. The combination of low center of gravity and increased width result in better traveler balance, more stable operation, and superior running conditions. More bearing area and uniform pressure reduces traveler wear.

The Model 01C Speed-Tex has all of the advantages of other Speed-Tex rings — the shortest and most economical breaking-in period of any ring available. In addition to break-in advantages, it retains the high surface finish and long life of previous Pawtucket rings.

COMPARATIVE MILL INSTALLATION DATA

Mill A 25's Warp Yarn	Frame—SG-3D Gwaltney
Model 01C Speed-Tex	Conventional Ring
Ring Size—2½" Diameter Spindle Speed—11,500 RPM Front Roll Speed—154 RPM Traveler Speed—7,500 FPM Traveler—Victor No. 4/0-X3D-89-HRW	Ring Size—2½" Diameter Spindle Speed—10,200 RPM Front Roll Speed—136 RPM Traveler Speed—6,700 FPM
Mill B 24.75's Warp Yarn	Frame—SG-3D Gwaltney
Model 01C Speed-Tex	Conventional Ring
Ring Size—2½" Diameter Spindle Speed—11,500 RPM Front Roll Speed—168 RPM Traveler Speed—7,500 FPM Traveler—Victor No. 3/0-X3D-89-HRW Break-in Schedule: No. 1—30 minutes No. 2—24 hours No. 3—48 hours No. 4—72 hours No. 5—96 hours Traveler Life—96 hours	Ring Size—2½" Diameter Spindle Speed—10,600 RPM Front Roll Speed—156 RPM Traveler Speed—6,950 FPM Traveler Life—48 hours

*Patent applied for

PAWTUCKET SPINNING RING DIVISION
CENTRAL FALLS, RHODE ISLAND
SACO-LOWELL SHOPS
60 BATTERYMARCH STREET, BOSTON 10, MASSACHUSETTS
Shops at BIDDEFORD and SACO, MAINE; SANFORD, N.C.; EASLEY, S. C.—Sales Offices: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

When You Promote, Check Your Impressions

• There's no sure-fire way of picking the right person for promotion, but you can avoid some mistakes by carefully appraising why you think a worker will succeed in a bigger job

By **JAMES E. GARDNER,** Assistant Director, Personnel Research, Fieldcrest Mills, Inc.

A promotion could be defined simply as someone's prediction, or a prediction from several people, that the man in question will succeed in a higher-level job. There is, of course, a basis for the prediction—knowledge of the man. To express the expanded definition, as it might be stated by a mill superintendent who is promoting an assistant foreman to a foreman's job: "From what I know of this man, he will make a good foreman."

Even this, however, does not accurately state the case. The word "knowledge" is often connected with the word "fact", and I do not want to imply that all we know about a man is factual. To the contrary, I want to make the point that the things we know about a particular person—true, half-true, and false—are tied together in an impression, a feeling about him, an attitude toward him. It is this impression that is the basis for promotion. The superintendent's statement should read: "From my impression of this man, he will make a good foreman."

It is the intent of this article to examine impressions in a general way to see how they are derived and to discover their weaknesses and limitations. A similar but more-specific examination in each case of promotion is suggested for foremen and others charged with making the decision, since the decision is no better than the impression it arises from.

1. The impression may be based on only a fragment of the man's job performance.

This sort of impression is typical of those held of mill supervisors by staff people. Since an individual staff man is concerned primarily with that part of a supervisor's job that ties in with his own specialty, the impression has a very limited basis. The danger is in the tendency to generalize, to assume that the way a supervisor conducts himself in personnel matters or time-study matters or purchasing matters is representative of his full job performance.

The fractional nature of the impression must be taken into account if staff people are consulted concerning the promotion of line personnel.

2. The impression may cover the whole area of the job but be based on insufficient observation.

This sort of impression often is held by a superior two levels above the person being rated. If a mill has assistant foremen, foremen, and a superintendent, the superintendent is likely in the long run to observe numerous aspects of the assistant foreman's job performance.

But it is rare that he can spend the time to get a really comprehensive view of the assistant foreman's actions in these job aspects. The superintendent's vision is broad, but limited observation will dim his view.

It is often assumed that a man's immediate superior will develop impressions that are based on adequate observations. A foreman, it is assumed, observes his assistant foreman closely and broadly enough to "size him up" accurately.

This assumption is not always true. Sometimes the foreman has to exert real effort to be sure that his observations are adequate. And there is always the uneasy feeling that the foreman's observations can never be adequate in that vital and somewhat private area of direct contact between the assistant foreman and production employees.

The immediate superior may know in detail what his subordinate does but may have very little knowledge of precisely how he goes about doing it. Certain skills used in getting along with people are not measurable and perhaps not really observable.

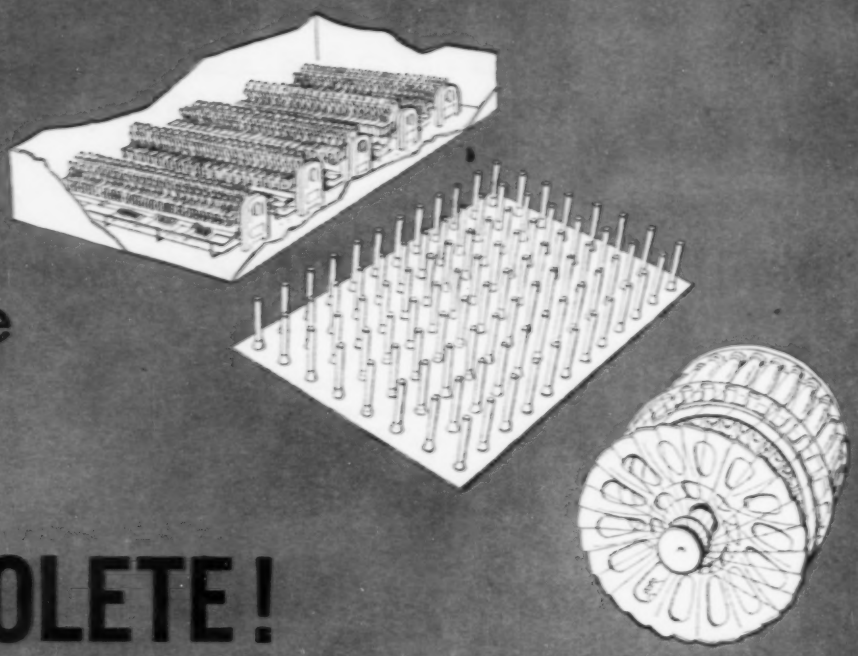
3. The impression may be based on objective indices without regard to specific difficulties and hindrances or to the "details."

This sort of impression is obtained by still higher levels of management who cannot be expected to observe the particular employee or to deal with the details. The "results" must speak for the employee at these higher levels, and it is assumed that the indices carrying the results are a valid indication of how well a unit or department or mill operates. Percent efficiency, percent seconds, percent waste, percent absenteeism are indices of this type.

But the bald figures may not reveal the full effect of special or abnormal conditions encountered by the supervisor. There is the further possibility that the actions and decisions of a supervisor may have little or no influence on a particular index. The impression of him may

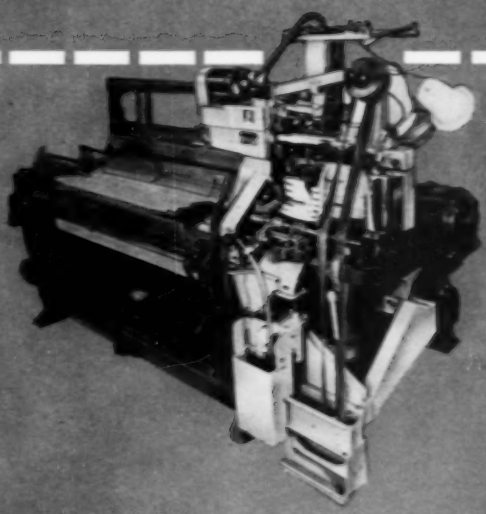
CONTINUED ON PAGE 148

All these are **OBSOLETE!**



UNIFIL did it

...and these mills are proving it!



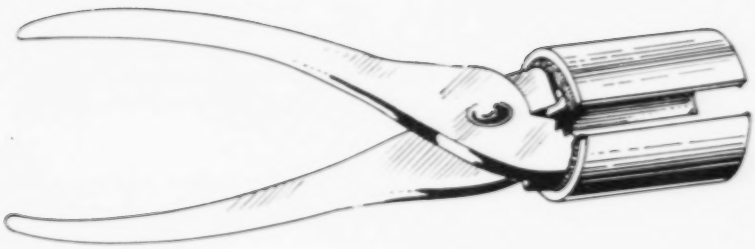
AMEROTRON • BURLINGTON INDUSTRIES • CANNON MILLS • CONE MILLS • DOVER MILL GROUP • PONEMAH MILLS • RIEGEL TEXTILE • STARR MILLS • J. P. STEVENS • UNITED MERCHANTS AND MANUFACTURERS • WOODSIDE MILLS *(A partial list only)*

Repeat orders from many mills are evidence of UNIFIL's *proven performance.*

Ask for a Profit Factor Analysis — Your competitors did — see how you can cut costs also. Call your Universal Sales Engineer.

23.7.28

UNIVERSAL WINDING COMPANY



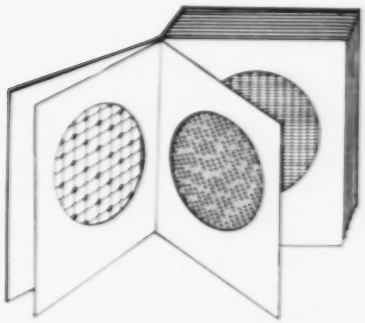
Special Tool Used To Pull Suction-Cleaner Plugs

We used to pull plugs from suction-cleaner flutes by gripping them with the fingers. The process was tedious, and sometimes the plugs were hard to remove.

The problem was solved by cutting a piece of 1¼-in. pipe 1½ ins. long and welding it to a pair of pliers as shown. A pipe cutter was used to cut the pipe so that a small flange was left on the inside.

Then a section of the pipe was cut out of each side so that the jaws of the pliers could be opened and shut.

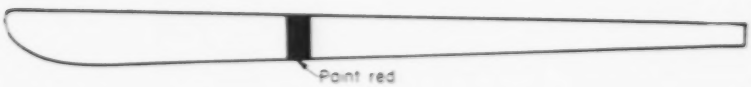
The tool makes it easy to pull plugs from the flutes and much time is saved. (K-3928) *Calvin Wright, Edenton, N. C.*



Keep Cloth Samples In Record Albums

Here's an easy way to file cloth samples: take a phonograph record album, and file two samples in each record receptacle. The sample numbers and other data are written on the front of the receptacle.

The album provides an easily accessible storage place for the samples, and they are kept clean and in numerical order. (K-3632) *H. J. Haas, Martinsburg, W. Va.*



Red Band on Picker Sticks Helps Keep Lugs High

For best loom performance, the lugs should be located at a specified position on the picker stick. This position will vary for different types of looms.

We have a red stripe the same width as the lug painted on our picker sticks at the correct lug position. Now the loomfixer knows exactly where to position the lug.

Since the lug covers the red stripe on the picker stick, any variation from standard setting of the lug will reveal the stripe; and the second hand and overseer can easily spot the looms that have lugs that are too low. Then loomfixers have to raise them. (K-3863) *Herman Medlock, Ware Shoals, S. C.*

Move Bag-Holder Fork To Keep Bobbins Off Floor

When a bobbin bag is used on a loom, bobbins sometimes bounce out onto the floor. There is a right and a left fork that holds the bobbin-bag frame. Both forks are attached to the front of the frame fork holder with two capscrews.

By placing the right, or outer, fork back of the frame fork holder, the outer side of the bobbin bag is canted inward. Few bobbins will escape the bag after this slight change, and therefore broken bobbins are eliminated. (K-3526) *H. E. W., Bloomburg, Pa.*

How To Stop Cap-Bar Nebs From Wearing Out

Our spinning frames have heavy top rolls that wear out cap-bar nebs in a few months. We tried reversing the neb, but the other end also wore out fast.

We stopped wear on the nebs by making a small insert of mild steel that slips into the neb and serves as a bearing. The nebs had to be filed down a bit so that the insert could be made thick enough to wear a long time.

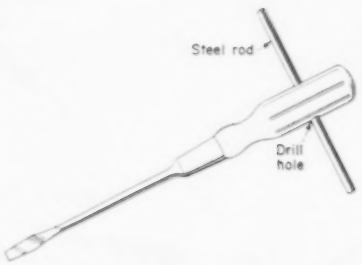
The top of the neb is left open so that the solid roll can be lifted out and the insert changed when necessary. This arrangement keeps nebs from wearing out and has improved evenness by keeping roll run-out more constant. (K-3457) *I. J. Abraham, Warangal, India*

April Prize-Winning Kink

The best Kink published in the April issue of TEXTILE WORLD, according to our reader-judges, was:

"Here's an Easy Way To Loosen Stubborn Screws"

The winner is being sent a check for $25 with the compliments of TEXTILE WORLD.



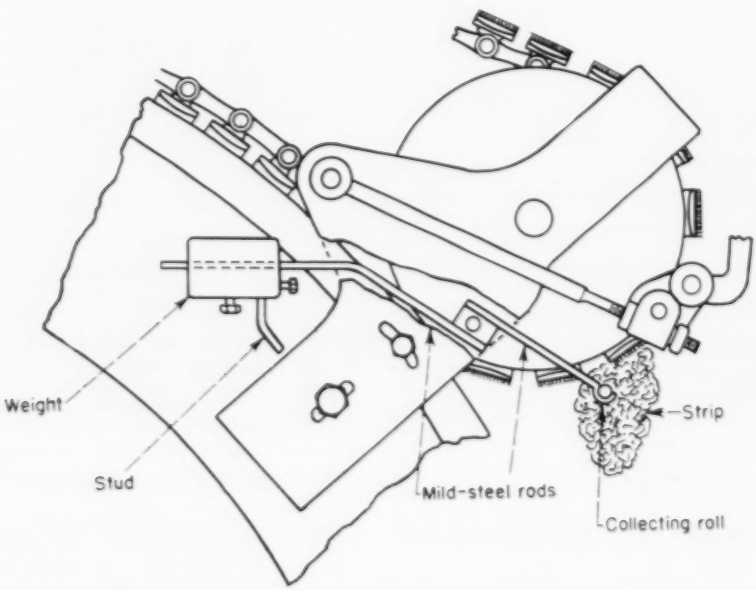
Here's an Easy Way To Loosen Stubborn Screws

Many screws on our machines were tight or in awkward places. To help loosen these screws, we drilled holes through the center of our screwdriver handles and put a 6-in. steel rod through the hole to use as a lever when we meet a stubborn screw. (K-3693)

The prize-winning Kink is reprinted at the right.

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.



This Collector Keeps Card Strips From Falling

Cards in our mill are not equipped with vacuum stripping, and the strips tended to fall off at times.

We made a strip collecter by welding two mild-steel rods to a piece of flat iron and adding a collecting roll at one end as shown in the diagram.

The attachment turns on a bolt in the front bracket that supports the front flats. An adjustable stud keeps the collecting roll from touching the flats and bending or drilling the flat wire. (K-3824) *Shlomo Zorfati, Petah-Tikva, Israel*

Old Piano Stool Makes Adjustable Shop Chair

Many jobs in a shop can be done better with the operator sitting. But nothing is more fatiguing than a chair that's too low or too high for the workbench being used.

An old piano stool bolted to the seat of a shop chair as shown in the accompanying sketch makes a seat that's quickly adjusted for any height of work. A quick twirl of your hand runs the stool seat up or down to the correct height. (K-3637) *Charles H. Willey, Penacook, N. H.*

...some facts about a NEW class of dyestuff.

PROCION

With the discovery and development of fiber-reactive dyes, a whole new field of dyestuff application has been opened up to the dyer and printer. Here are the answers to some of the questions that have been asked about them.

Q

1. How do fiber-reactive dyes differ from the conventional types?
2. Are fiber-reactive dyes new?
3. How are the **Procions** applied?
4. How do the normal Procions differ from the Procion "H" brands?
5. From the point of view of dyehouse or print shop economics, can fast, brilliant shades be obtained reasonably with Procion dyestuffs?

PROCION *is a registered trademark, the property of Imperial Chemical Industries, Ltd.*

A

1. Conventional dyes are mechanically retained or physically absorbed by the fiber. Fiber-reactive dyes form a true chemical bond with the cellulose molecule. *The high wet fastness properties of the Procion dyestuffs are due to this chemical linkage with the fiber.*
2. A chemical linkage between dye and fiber was achieved over 60 years ago, but it was just recently that chemists of Imperial Chemical Industries, Ltd. developed **PROCION** dyes and worked out commercial applications for them.
3. Procion dyestuffs can be applied by existing continuous, semi-continuous, and batchwise methods as well as by conventional printing methods. The cotton or rayon fabric is simply treated in an aqueous solution of Procion dyestuff, and an addition of mild alkali effects fixation to the cellulose.
4. The normal or cold dyeing Procions are capable of reacting more readily with the cellulose molecule. The normal Procion dyestuffs are, therefore, the preferred type for continuous, semi-continuous, and batchwise methods of application. For the printer, the "H" brands offer excellent print paste storage stability. *Both types are equal in solubility, wet fastness and brilliancy of shade.*
5. *Definitely.* Consider the following facts:
   a. Conventional dyeing or printing machinery is fully adequate for applying Procions.
   b. Since the cold dyeing Procion dyestuffs can be applied at room temperature, a considerable saving in steaming costs can be realized.
   c. Only relatively inexpensive dyebath chemicals are needed.
   d. Bright, light- and wash-fast shades in pale and medium depths can be obtained at costs approaching those of non-fast dyes — OR — the dyer or printer who normally uses non-fast dyestuffs can *for little extra cost* produce pale to heavy shades having qualities which approach those of the most expensive classes of dyestuffs.

Perhaps in the **PROCION** dyes lies the answer to *your* dyeing or printing problem. Talk it over with an Ahco salesman. He will show you how PROCIONS can work for you!

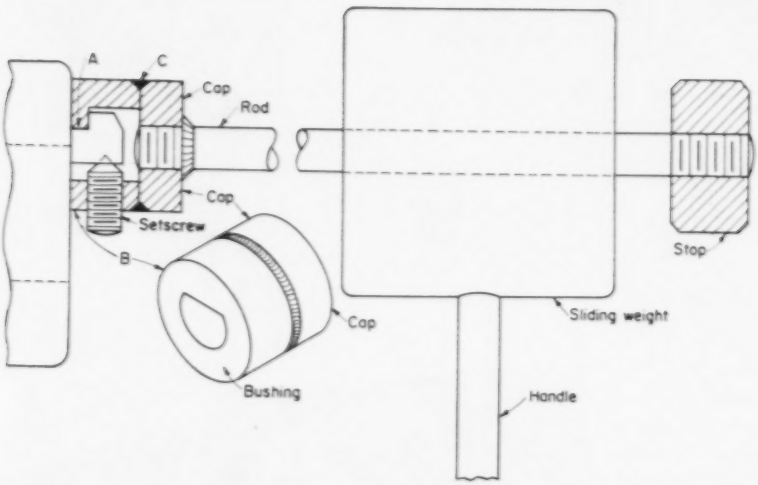
Quality-Integrity

AHCO DYES

ARNOLD, HOFFMAN

Arnold, Hoffman & Co. Inc. • Est. 1815
Offices & Technical Service Laboratories
Providence, Atlanta, Charlotte, Teterboro
Associated with Imperial Chemical Industries, Limited • London, England.

For more data, write this page number on Reader-Service card. →



Tool Made From Steel Parts Removes Frozen Shaft Keys

A gib-head key is commonly used to secure hubs to shafts on textile machines. And because this key has a projecting head, it is usually easier to remove than most key fasteners.

But when a key has been in place for a long time, moisture corrodes it and it freezes to the hub and shaft. Then a considerable amount of force is needed to free it.

Impact is the best way to jar a frozen key loose. Where plenty of space is available at the end of the shaft, the homemade puller shown in the accompanying sketch quickly breaks loose a frozen key.

To make the puller, first make the bushing shown in the sketch. Bore the bushing from one end and leave ¼ in. of the other end unbored. Then drill and chisel the end as shown in the sketch so that one side of the bushing forms a hooked surface to go over the gibbed head of the key as shown at *A*.

Drill a hole and tap the opposite side of the bushing for a ¼-in. sharp-pointed, hollow-head setscrew, as shown at *B* in the sketch.

Make a steel cap the same outside diameter of the bushing. Drill and tap this cap for a threaded rod 1¼ ins. in diameter. Screw this rod into the cap and weld the rod securely to the cap.

Then grind the surfaces on the bushing and cap, as shown at *C* in the sketch, and weld the two parts together.

Cut a piece of round steel stock 6 ins. in diameter to about 6 ins. long to use as a sliding weight. Bore a hole in the center of the round surface so that this block slides easily on the 1¼-in. rod that's welded to the bushing cap. Bore a hole in the center of the side of the block and press in a 1-in.-dia. rod 12 ins. long for a handle.

Thread the free end of the 1¼-in. rod for a threaded 3-in.-dia. metal block and screw the block on the rod. This block is a stop for the large block.

Use high-tensile-strength steel for all the parts because the finished tool must take a lot of hammering.

To use the tool: (1) push the bushing over the key with the shoulder over the gib-head key as shown at *A*, (2) tighten the setscrew *B* against the other side of the key, and (3) hammer the sliding weight against the stop.

With only a few blows of the weight, the frozen key comes loose. (K-3286) *Clifford T. Bower, London, England*

$500 for Best Kink in 1958 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

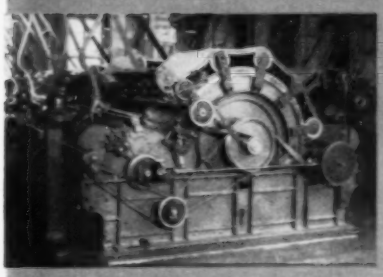
The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

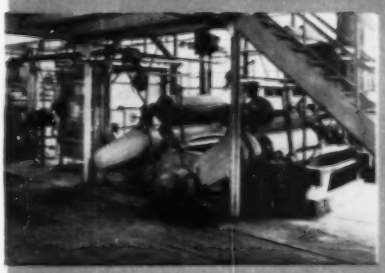
Send in your Kink now. There is always a contest going on.

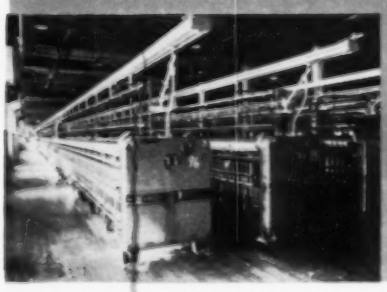
RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1958.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In case of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.







Textile mills and machinery

FOR SALE

Comer knows the textile machinery field as few companies do. Its service is world-wide, covering every conceivable textile operation. A textile by-word for over 25 years, Comer means service, dependability, and integrity. The pricing is responsible, the service complete, with quality based on the accurate, factual listings of every item.

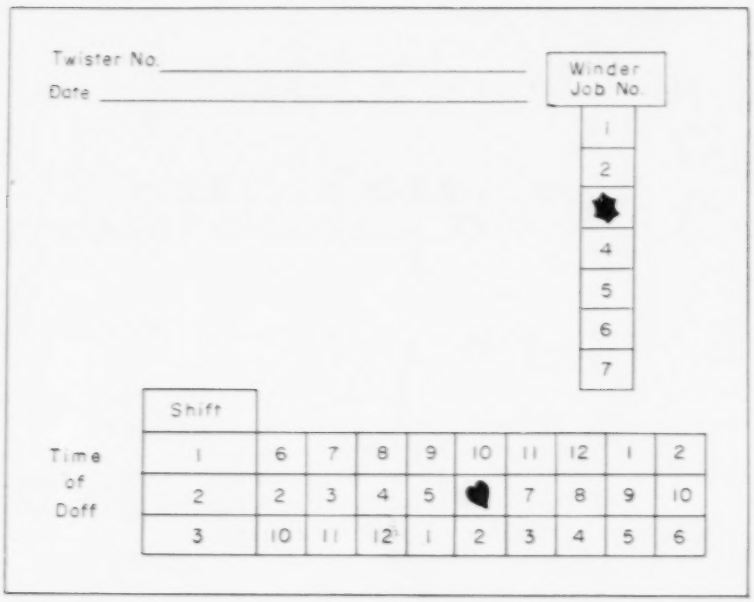
Currently liquidating the following mills—

1—COMPLETE PRINTING AND FINISHING PLANT
8,000 SPINDLE-COARSE YARN-MILL
10,000 SPINDLE-200 LOOM-DUCK MILL
26,000 SPINDLE-600 LOOM-PRINT-CLOTH MILL
40,000 SPINDLE-1300 LOOM-DENIM MILL

Comer's skilled staff stands ready to assist in machinery selection to provide complete, accurate information in depth on all machinery listings. Complete catalogs and listings available. Write for your copy, specifying types of machinery of particular interest.

COMER MACHINERY COMPANY
CHARLOTTE • ATLANTA

For more data, write this page number on Reader-Service card. →



Punch-Ticket System Is Used To Compute Winders' Pay

We are paying our winder operators by the bobbins wound and have worked out a system for reporting the number of bobbins wound by each operator on each shift.

To accomplish this operation without too much record keeping from our production employees, we worked out a ticket and hand-punch method.

We have twisters with both 200 spindles per frame and 256 spindles per frame. We had our tickets printed in two different colors to represent the two different-size frames. Then we issued hand punches to all our twister doffers and yarn men at the winders. Each punches a different symbol. A job number was assigned to each of our winder operators.

The system works as follows:

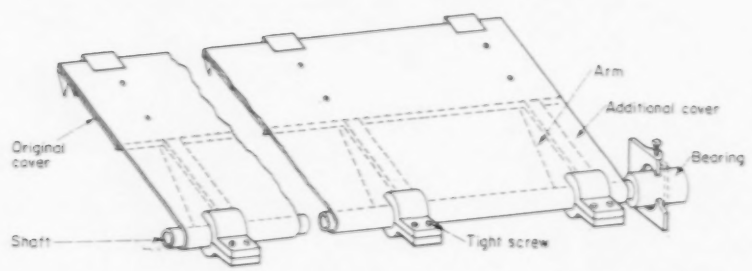
The production clerk in the mill makes out enough tickets in advance to last one day. He puts the twister number and the date on each ticket and hangs them in pad form on each twister. When a doffer doffs a twister, he punches out the time of the doff to the nearest hour on his shift and places the ticket in the box with the yarn.

When the yarn is taken to be wound, the yarn men punch out the winder-operation job number where the yarn is laid up. At the end of each shift, the tickets are collected and turned in to the office to be used in computing the winder operators' pay.

The information contained on the ticket is as follows:

Twister number where yarn was twisted
Date yarn was twisted
Doffer who doffed the bobbins
Number of bobbins per box
Shift on which yarn was twisted
Approximate time of doff
Yarn man who handled the bobbins
Winder operator who wound up the yarn

All of this information is collected without any writing or record keeping on the part of our production employees, and the system is a great aid to quality control. (K-3768) *Cost and Time Study Dept., Carolina Mills, Inc., Maiden, N. C.*



Modified Feeder Prevents Chokes at the Combing Roll

Our opening-room feeders occasionally tangled cotton around the combing-roll shaft. This tangling caused trouble and downtime because we had to stop the feeders to clean them.

We stopped the trouble by making an additional cover of 3/32-in. sheet metal and attaching it above the combing-roll shaft as shown in the diagram above.

The extra cover keeps surplus cotton from getting tangled around the shaft or the arms of the roll. We have used this feeder modification over two years, and it has proved very satisfactory. (K-3833) *I. Ben-Tovim, Ramat-Gan, Israel*

Apply Size on Cones To Stop Sloughing

When the spindle becomes loose on cone-winding machines, the take-up package moves backward and forward slightly and makes a crossover at the top or bottom of the cone. This crossover frequently causes the yarn to become loose and to slough off.

To remedy this fault, we apply a size solution (suitable for the yarn being run) on the crossover. Extra-heavy applications of the size are made where the crossover enters and leaves the package.

Take a pick to loosen the crossover at the bottom of the cone, and replace the crossover as close as possible to where it should be. (K-3846) *Joseph Sewesky, Berwick, Pa.*

JENKINS FIG. 106-A BRONZE GLOBE 150 LBS. STEAM . . . 300 LBS. O.W.G.

in Disc Equipped Bronze Valves

LOOK at that Wheel — Tough malleable iron. Design unequalled for cool, sure grip.

LOOK at the Index Plate — Has Fig. No. etched in green background. Held by wheel nut which is secured by rolled-over spindle end.

LOOK at that Spindle — Made of high tensile bronze. See how much heavier it is . . . how many more deeply cut threads engage bonnet. And, the crowned head that reduces friction on disc holder. Sure, it costs more to make a spindle this way. But it reduces wear, preserves packing, means easier operation.

LOOK at the Packing Nut and Gland—Note the heavy and deep bronze hex. And, that bronze gland designed to compress packing toward spindle.

LOOK at that Packing Box — Its depth equals 1½ times spindle diameter. More packing space means less repacking. An asbestos, lubricated and graphited packing is used.

LOOK at that Bonnet — One-piece, screw-over design with big hex surfaces is easy to remove. Take an extra look at the bevel joint between bonnet and body, serving as an internal brace against the crushing effect of the bonnet assembly. Millions of Fig. 106-A in use for years prove this unique design licks distortion and springing.

LOOK at the Disc Holder — It's the Slip-on Stay-on type originated by Jenkins. Correct protective depth prevents flaking or cracking of disc.

LOOK at the Disc — Easily renewed without removing valve from line. Made of compositions to suit various services . . . and **made by Jenkins**, the only maker of both valves and discs.

LOOK at that Body — Just compare wall thickness of this high tensile bronze body with any other valve. The factor of safety is many times higher than rating requires. See the curved diaphragm to protect seat from distortion by pipe strain. Note that the raised seat is higher to permit more reseating operations . . . and wider, so it won't cut into disc. Pipe threads are full length and clean cut.

LOOK at this . . . for Throttling

—Just replace the standard disc nut with this Throttling Nut and a Fig. 106-A becomes well-suited to throttling service. This unique nut reduces the effects of wire drawing and its long legs restrict flow for accurate control. Many plants take advantage of this versatile valve to reduce valve and parts inventory.

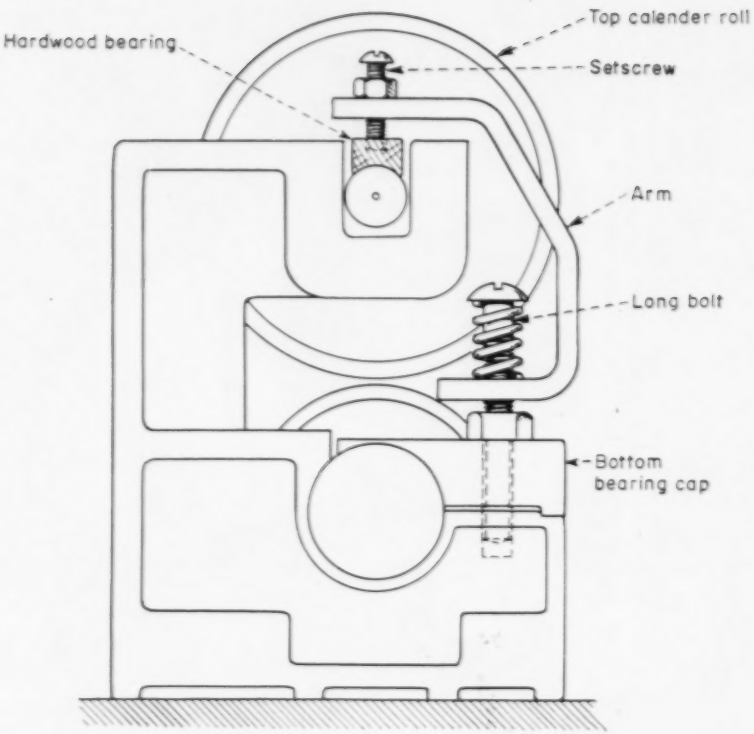
THE FIRST renewable composition disc valve was a Jenkins Valve, originated nearly a century ago. Compare today's Fig. 106-A Bronze Globe with any other. See why so many valve users agree that a *Jenkins* is still the FIRST for top value. For descriptive folder No. 189-B on the full line of Jenkins Bronze Globe, Angle and Check Valves write to Jenkins Bros., 100 Park Avenue, New York 17.

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

JENKINS SINCE 1864 Jenkins Bros.

SOLD THROUGH LEADING DISTRIBUTORS EVERYWHERE

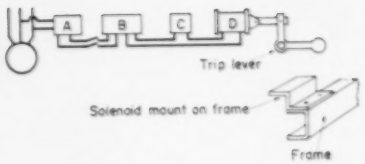


Bolt Increases Pressure on Card Calender Roll

We were not getting enough pressure from the top calender roll on our cards. To produce additional pressure, we substituted in the bottom bearing cap a longer bolt with a spring arrangement and steel arm as shown in the diagram.

The top of the arm has attached to it a setscrew and hard wooden bearing.

Pressure on the calender roll is adjusted by turning the setscrew in either direction. (K-3742) *S. Zorfati, Petah-Tikva, Israel*



Rig a Cycle Control For B-C Spoolers

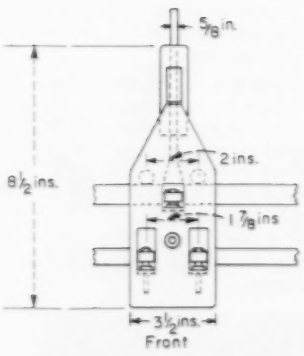
Since we have to change the time cycle on our Barber-Colman spoolers frequently because of the numerous yarn numbers run, it is essential that we have a quick and accurate way to change the cycle of the traveler unit.

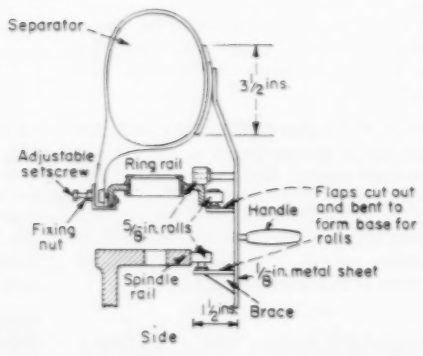
We improved our efficiency by locating a Micro switch so that the traveler unit closes the switch as it stops. This action starts the timer. At the end of the timing setting, the timer energizes the solenoid and releases the traveler unit.

When the traveler unit leaves the Micro switch, the circuit is de-energized and the timer automatically is reset to zero, where it remains until the traveler completes the tying cycle.

We use a time scale from zero to 20 mins., but the timer can be set as desired. The timer is accurate to ±1/60 sec. Changing the time cycle is simple and positive and requires only seconds.

Wiring arrangement is shown in the diagram. At *A* is a transformer for 600 primary volts and 110 and 220 secondary volts. At *B* is a Micro-flex and timer with a scale running from zero to 20 mins. At *C* is a Micro switch, and at *B* is a 110-v., 60-cycle solenoid. (K-3781) *J. B. Cooper, Plant Engineer, Coats & Clark, Inc., Clarkdale, Ga.*





Gauge Is Used To Realign Separators

To realign separators after they are knocked about by doffing trucks, we made a gauge to help the fixer adjust the separators. The gauge is used after doffing when the ring rail is in its low position.

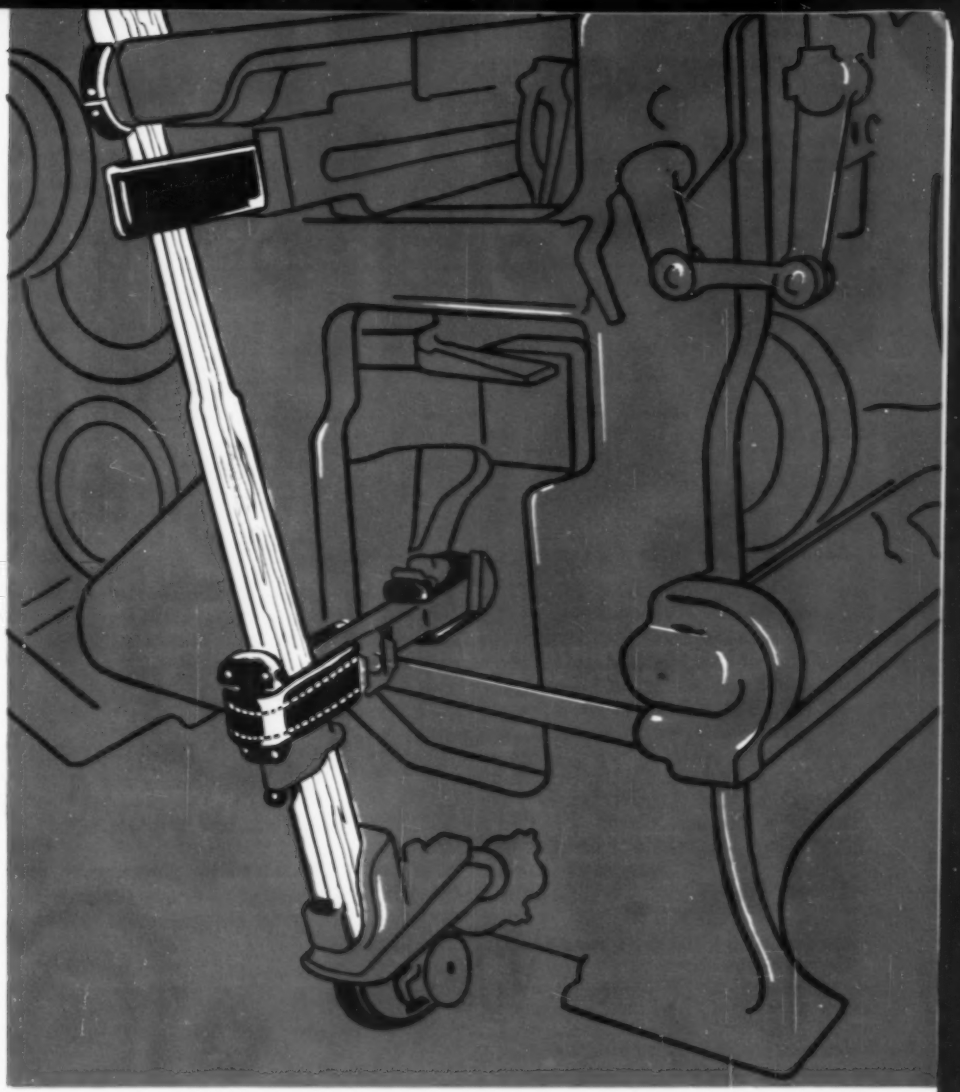
The gauge is set to the frame, as shown in the sketch, and rolled along the rails in front of each separator. Separators that are out of line are adjusted with a setscrew. (K-3748) *Richard Fishman, Tel-Aviv, Israel*

Where the Job Selects the Strap

Rhoads Curved Check Straps (illustrated) are carefully die-cut to your dimensions. Rhoads textile straps and leathers include spindle bumper straps, block bumpers, and harness leathers — all made with the same care that has kept Rhoads first in textile leathers for generations.

In Rhoads Endless Check Straps, the Tannate special leather absorbs repeated shocks and resists friction. Operates efficiently without being distorted by the arc of the picker stick.

In Rhoads BiCut Check Straps, more leather hugs the picker stick to cushion its flight, and box the shuttle perfectly. Wear is uniform because the picker stick strikes the full face width of the strap.



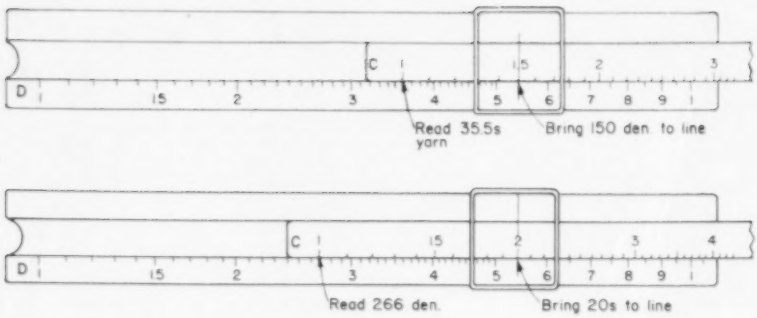
First in Textile Leathers

It's the mill-proved economy of Rhoads textile leathers that makes them first choice of superintendents and overseers. For example: a mill weaving sateens and twills at 182 picks per minute, 144 hours a week, reports Rhoads BiCut Check Straps in use 5,000 to 5,500 hours before replacement — twice the life of straps previously used.

Talk to a Rhoads engineer about your textile leather needs — check straps, harness and jack straps, lug and hold-up straps, loom straps. You'll get the same engineered service that is back of Rhoads flat leather belting for mechanical power transmission. Address: J. E. Rhoads & Sons, 2100 W. 11th Street, Wilmington 99, Delaware.

RHOADS

Since 1702 . . . Pioneers in Textile Leather



Modify Slide Rule To Convert Yarn Numbers

We use an ordinary slide rule to convert cotton yarn numbers to rayon denier equivalents and vice versa.

The slide rule was modified by adding a fine red line at 5,315 on fixed scale *D*. Here is how to use it.

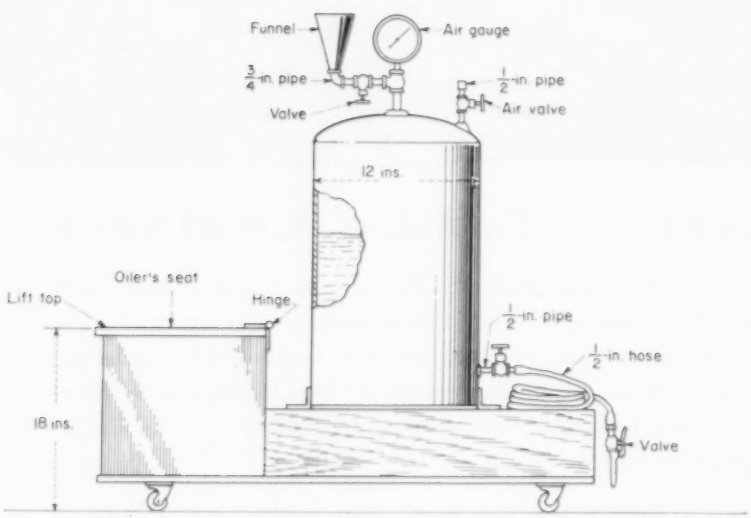
To find the denier equivalent of 20s cotton yarn, slide *C* scale so that 2 (20s) is opposite the red line and read *D* scale at 1 on *C* scale. The answer is 266-den. rayon.

To find the cotton equivalent of 150-den. rayon, slide *C* scale so that 1.5 (150 den.) coincides with the red line on *D* scale. The answer opposite 1 on *C* scale is 35.5s cotton yarn.

This system is based on the formula:

$$\text{Cotton yarn number} = \frac{5{,}315}{\text{denier}}$$

(K-3808) *Hokao, Fukaya, Fukui-Ken, Japan*

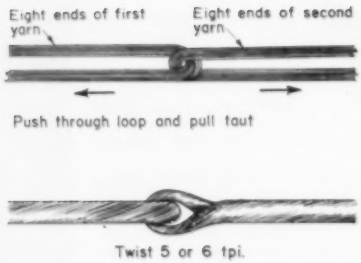


Old 20-Gal. Water Tank Makes a Good Oil Dispenser

Spindles in our mill formerly were oiled from quart cans, which was a slow and tedious process. We improved and speeded up the operation by building a supply tank from an old 20-gal. hot-water tank.

The tank is mounted on an 18x42-in. wooden truck. A box on the rear serves as a container for rags and as a seat for the oiler.

We inserted an air valve in the tank and use about 5 lbs. of pressure to force the oil out of the tank. Gravity flow can be used, but we find that a little pressure speeds up the operation. (K-3838)



Here's a Simple Way To Identify Mixed Yarns

Mixed filament yarns are not easy to distinguish unless some testing equipment is available. Here's a simple method that can be used in the mill to tell the difference between mixed yarns.

Take two of the packages containing the yarn, and pull about 1 ft. of yarn from each package. Double this length eight times to obtain about 8 ft. of yarn.

Form a loop in the first foot of doubled yarn and insert the second piece of yarn through the loop and pull it taut. Roll the yarn between the fingers until there are about 5 or 6 tpi. in the yarn.

Run the yarn rapidly between the index finger and the thumb, and the difference in deniers can be felt readily. The difference in the yarn is more noticeable when the fingers leave one yarn at the point where the sections are looped. (K-3844) *Joseph Sewesky, Berwick, Pa.*

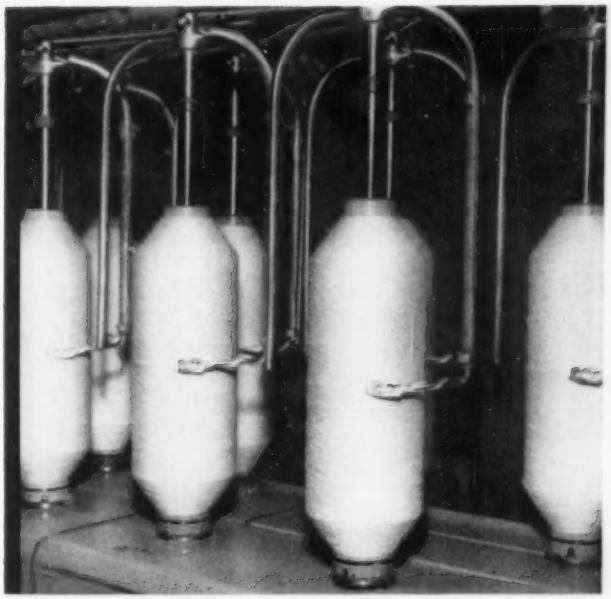
Clean Take-Up Brackets To Keep Knitwear Clean

Knitting-machine take-up rolls have 2 or 3 ins. of space on either end of the rolls where the fabric doesn't touch. Oil collects on these spaces and eventually gets on the fabric.

Knitters and fixers usually clean the take-up from the top down and frequently ignore the bottom of the take-up bracket. The oil comes from the take-up bracket; so if you concentrate on keeping the take-up brackets clean, you will stop this oil problem. (K-3142)

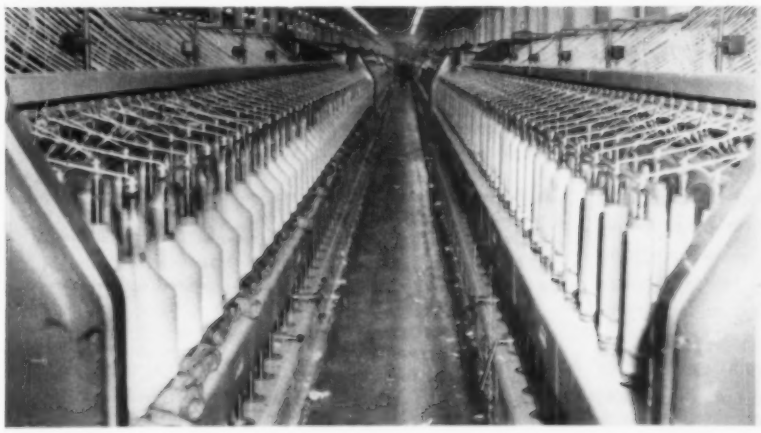
Get more ROVING on all sizes of bobbins

by J. L. C.



New Arro Flyers with High Tension Pressers increase weight 25-40% with no deterioration in quality

We believe this combination gives more roving on bobbins than any other system in the world. The evenness obtained equals or betters production with usual flyers. Weight is increased without increasing the twists per inch or the number of turns around the presser arm.



These frames are producing .60 hank from 70 grain sliver at a spindle speed of 735. Ends down average less than 2 per hank.

In a test recently run in the South on a 10 x 5 slubber with 2.50 hank roving, 1-7/16" combed cotton with a .90 twist multiplier and a spindle speed of 1004 r.p.m., the weight was increased from the normal 28 ozs. net to 39 ozs.—an increase of about 40%.

"Arro" Flyers can of course be put on any frame: for ultimate efficiency we recommend the Platt MS.2 Roving Frame. These streamlined frames produce an even non-stretched roving of superior quality. Vibration and sound have been cut to a minimum. This smoother operation increases the frame's life. The more even roving means fewer ends down in spinning. Before purchasing any new frames, we invite you to write for more information on those made by the *world's largest manufacturer of textile machinery*.

Slubbing bobbins 12" x 6½" dia. containing approx. 64 ozs. of roving, 1.0 hank, can be easily produced from good American cotton.

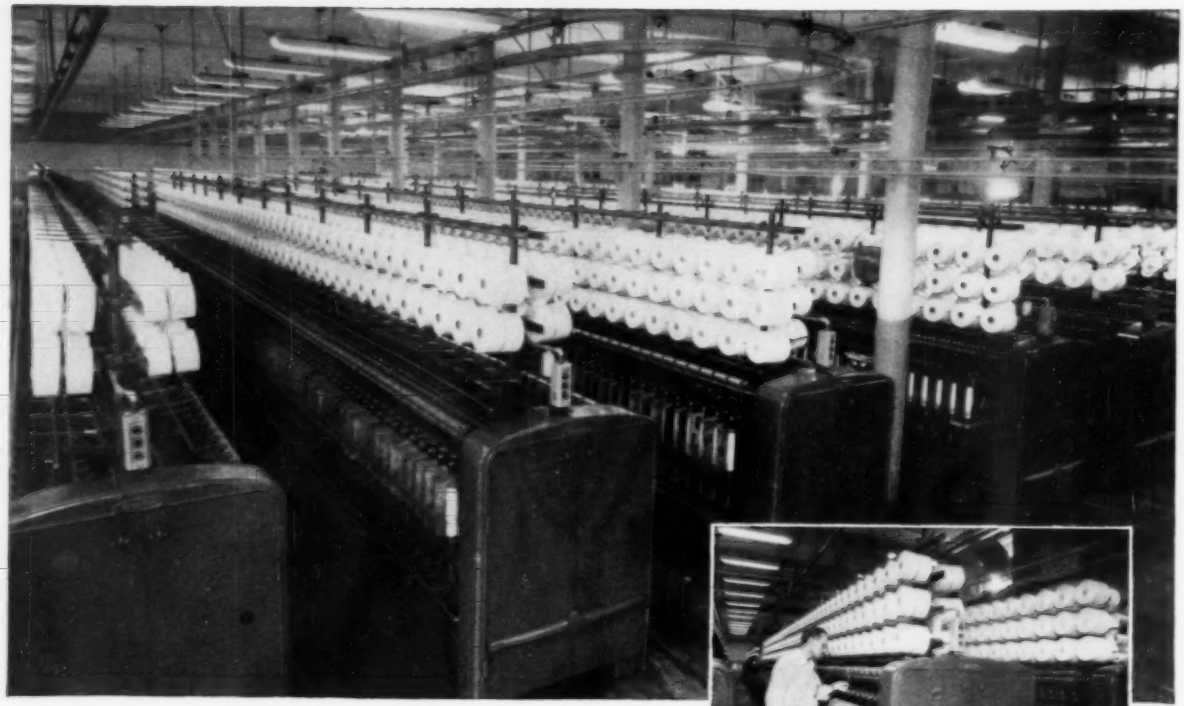
New "Arro" Flyer has a finish considerably better than previously obtainable. Even the inside of the hollow leg is completely finished. Mill tests have shown that fibre accumulation is reduced at least 25%. Another important feature is that the threading slot is in the leading side of the hollow leg so air enters the slot and prevents escape of loose fibre.

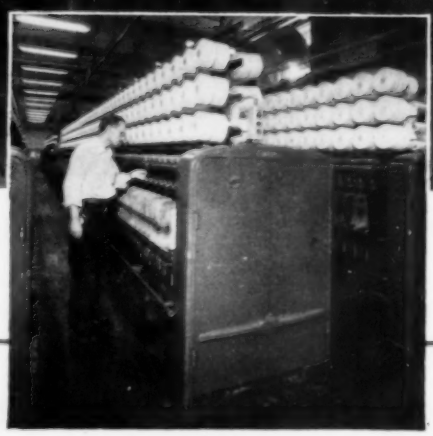
Even if you don't wish to invest in new frames to get heavier packages, consider the proven "Arro" Flyers for your present frames. Over 3,000 are running in the south. Call Gene Bozeman at Charlotte, (FR 6-5879), Harvey Clinch at Greenville, (GR 9-6257), or the writer at Framingham, Mass., (TR 3-7496). Any one of these numbers will give you more information about cost, etc.

ATKINSON, HASERICK & CO.
INC.
FRAMINGHAM, MASS.
336 Ridgewood Ave., Charlotte, N.C.
Greenville, S.C.
Philadelphia, Pa.

PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND
Marketing the textile machinery made in the works of Platt Bros. & Co. Ltd., Howard & Bullough Ltd., Dobson & Barlow Ltd.

For more data, write this page number on Reader-Service card. →





Rx for *longer* TWISTER Life and *greater* Profits . . . .

Install... WHITIN *Pacemakers!*

Whitin Pacemaker* Twisters lead all others by making greater profits for their users over a far longer period of time. This outstanding Whitin Twister for cotton and spun synthetics is setting records for production, uniformity of twist and lowest operating and maintenance costs. Advanced in design and sturdily built, the machine is designed mechanically to run at speeds far beyond fiber and traveler speed limitations. The following features are available:

- **Minimum angulation of yarn path — delivery roll position relative to balloon guide permits nearly vertical path of yarn in twisting zone.**
- **Gear train in head end mounted on antifriction bearings.**
- **Laminated Bakelite gears inter-meshed with metallic gears in head end reduce noise level.**
- **Delivery roll mounted on grease-packed ball bearings.**
- **Nylon insert bearings for top roll gudgeons.**
- **Steel pulleys and through shafts mounted on antifriction bearings reduce maintenance costs.**
- **Antifriction tape tension pulleys.**
- **Stationary support rods for ring rails mounted back of spindle rail to reduce yarn contamination.**
- **Stationary separators mounted on spindle rails extending through slotted ring rails reduce possibility of end breakage at adjoining spindle positions.**
- **Hexagonal steel cross shafts mounted on ball bearings — Broached holes in lifting arms and spring counterweighted ring rails assure maintenance of yarn wind accuracy on bobbins.**

*Trade Mark

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

← For more data, write this page number on Reader-Service card.

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Stencil Printing Machine Is Usually Mill Made

Technical Editor:

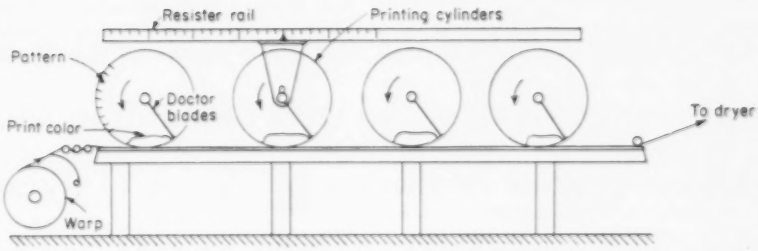
Who makes the machines to continuously print warps as described in TEXTILE WORLD, March, '58, p. 156? (1386)

The machines we have seen in use have been built in the mill. They are not difficult to build. You can make the table as long as you like and use as many printing cylinders as you like.

The table top should be resilient because the drums rotate by their own weight on the table along which the warp is drawn. The circumference of the cylinder is best made out of thin stainless steel. The diameter of the cylinder determines the maximum repeat after subtracting the pattern area.

Each cylinder prints one color from the inside of the cylinder. Color is replenished through the open side of the cylinder at any time while the cylinders are rotating.

The cylinders are suspended from a register rail hung near the ceiling, and they are moved to their exact position so that the relationship of printing length and roller circumference gives the exact repeat.



WARP PRINTING can be done on this stencil printing machine that can be built in the mill. The printing cylinders are perforated to suit the pattern required. The doctor blades keep the color from moving with the rotating drum.

Woven Cotton Fabrics Are Getting Wider

Technical Editor:

What is the trend in loom widths for woven cotton fabrics except household fabrics used for sheets and towels? Do fabrics to be finished 42 to 45 ins. wide require 52- to 54-in.-wide looms? (1388)

There is a trend toward slightly wider cotton cloth for converting. The once-popular 36-in. loom is now almost obsolete, and many of the 40-in. looms are being widened or scrapped.

However, most of the fabrics that require a finished width of 42 to 45 ins. can be woven on 44- and 46-in. looms. Some mills have installed 50- and 60-in. looms, but they are used mostly to produce wide industrial fabrics and special weaves such as draperies.

Hybrid Cotton Gives More Yield

Technical Editor:

We have heard about experiments in sterilizing cotton plants by spraying the plants with a chemical. Does this mean that cotton will have no seed and won't have to be ginned? (1378)

Experiments are being made by Dr. F. M. Eaton, University of California, to produce male sterility in cotton to produce hybrid cotton seed. Final yields of cotton from the hybrid seed showed as much as a 25% increase.

Cotton plants are sprayed with sodium dichloroisobutyrate, which keeps the plants from developing their own pollen but leaves them receptive to pollen from other plants. Normally, the cotton plant fertilizes itself and neighboring plants. When the pollen is killed by the chemical, the plant cannot pollinate itself but can receive pollen only from another plant.

Scientists have produced hybrid flowers and seed for years by hand emasculation of each flower, but the new method lends itself to mass production.

The cotton is planted with different varieties in alternate rows. Alternate rows are sprayed so this variety could not fertilize itself. Experiments are continuing to discover the best varieties to make a good hybrid seed.

Here's a Definition Of the Term mm^2/mm^3

Technical Editor:

We've noticed the term mm^2/mm^3 in regard to cotton fibers. Can you tell us what this term means? (1389)

The term mm^2/mm^3 refers to the number of square millimeters of exterior surface of the fibers per cubic millimeter of fibrous material. As the fibers get smaller, the amount of surface-per-unit volume of fibrous material becomes larger.

A coarse cotton is likely to have an area of 300 or more mm^2/mm^3 of fibrous material, whereas the average cotton would run 400 mm^2/mm^3, and fine cottons would be above 500 mm^2/mm^3.

New word in dyeability: Zefran®

zĕf-răn

(Zĕf-răn), n. 1.

Entirely new acrylic alloy made exclusively by The Dow Chemical Company. 2. Takes unusually wide range of standard dyes (including vats). Allows greater flexibility in choice of dyestuffs than any other fiber, natural or man-made. Does not require pressure, carriers, temperature above the boil or other extreme conditions in dyeing. 3. Continuous dyeing, roller and screen printing are a natural with Zefran. This all adds up to economy in dyeing. 4. Available in 2, 3 and 6 denier staple.

Fabrics now being created by selected mills (for apparel only). For further information write The Dow Chemical Company, Textile Fibers Department, Williamsburg, Va.

Zefran

You can depend on DOW

Stronger Tire Yarn

American Viscose Corp. will shift its rayon tire-cord production to a new high-strength yarn in order to compete with nylon in the tire market.

Most of the production will be in the 1,100-den. category instead of the previously standard 1,650-den. type. This change is a concession to the trend toward lighter-weight and stronger tires.

The new yarn is said to be 50% stronger than the old type. The price is 63¢ a lb. compared with 58¢ a lb. for the 1,650-den. yarn.

Courtaulds, American Enka, and Beaunit Mills are also changing over to meet tire-makers' requirements. Beaunit expects its entire production to be changed over by late summer or early fall.

Built-in Bacteriastat

Celanese Corp. has been granted an exclusive license to incorporate a bacteriastatic material in several of its acetate, triacetate, and rayon yarns. Permachem Corp. of West Palm Beach, Fla., is the manufacturer of the product, which inhibits the growth of molds, mildew, and common bacteria. Present plans are to use the product in yarns for lingerie and other apparel, carpeting, and home furnishings.

Dull Tones for Fall

Early cutter selections of woolen suit and dress goods for the fall, 1958, season strongly favor smooth fabrics and muted autumn colors, Amerotron Co. reports.

Colors preferred are dull tones of orange, gold, cadet blue, bitter sweet, and terra cotta.

Fabric preferences run toward smooth, flannel-type suiting in 100% wool and dress weights in 87½% wool with 12½% nylon.

Drip-Dry Shirt Fabric

An all-cotton drip-dry shirt guaranteed never to wrinkle has been introduced under the Van Heusen label. Called the Century Vantage, it is said to be the first fully guaranteed "no ironing" wrinklefree shirt fabric on the market.

New Brushed Mohair Fabric

Knit Souffle, a mohair-and-nylon fabric knitted on a two-ply combed-cotton backing and brushed for a nappy look, has been announced by Originit Mills.

It is described as similar to Ascher, the brushed mohair-woolen so successful for dresses, suits, and coats. Knit Souffle sells for $3 a yd., compared to $30 a yd. for Ascher.

New Nylon for Carpets

The nylon division of Industrial Rayon Corp. has introduced a 22-den. staple fiber for floor coverings said to have better crush-recovery characteristics and a firmer hand than current nylons used for that purpose.

Several manufacturers are evaluating the fiber in wool blends.

One of these, Artloom Carpet Co., is using the staple in a 70-30 wool-and-nylon blend.

The 22-den. is made both in bright and dull lusters in 3-, 4½- and 7½-in. lengths.

More Synthetics Blends Seen

Fall sales of men's wear will show a large increase in the use of man-made fibers over last year, according to Du Pont.

Before this year, most acrylic and polyester yarns used in men's clothing went into summer-suit lines. In 1958, cutters will use 6-million yds. more Orlon and Dacron than they did last year for autumn cuttings.

About 55 manufacturers of men's suits and 65 makers of men's slacks will offer fall-weight garments in blends of wool and these man-made fibers.

New Spun-Dyed Shades

Willow Greene C-69 and Copper Leaf C-70 have been added to the line of solution-dyed yarns offered by Celanese Corp. The shades are available in regular deniers and are suggested for apparel and home furnishings.

Pile Fabrics for Coats

Glenoit Mills has announced two new pile fabrics (imitation fur) for women's coats. The pile is all-acrylic fibers, chiefly Verel.

The fabrics, called Regina Glenara, are described as (1) a plain fabric with two-dimensional effect, and (2) a stripe fabric achieved by blending fibers.

Dacron-Cotton Voile

A successful voile fabric of 65% Dacron and 35% cotton has been announced by Du Pont. The fabric is said to be wrinkle-resistant and to lend itself to wash-and-wear finishes.

Fabrics Woven to Shape

Fabrics woven to shapes such as boxes, diamonds, I-sections, channels, honeycomb, etc. were described last month by Raymond De-Icer & Engineering Co., Huntington Park, Calif.

The fabrics are woven by special methods called "contour weaving." Basic changes to a conventional loom to make contour weaving possible were:

• Substituting a creel for the warp beam

• Substituting a jacquard arrangement for the harness motion
• Substituting a cam-shaped roll for the take-up roll.

The fabrics are used for reinforcing plastics molded to the same shapes as the woven fabrics.

Suede-Like Vinyl Fabric

A vinyl fabric with a suede-like appearance, expected to find uses in clothing, has been announced by Textileather Div. of General Tire & Rubber Co.

Called Velvin, the fabric is now being made with a sateen or sheeting back.

The "breatheable" vinyl will be available in eight colors at about 50¢ per sq. ft.

More Acrilan for Blankets

Sales of Acrilan for use in blankets were up 75% in the first quarter of this year over the same period last year, Chemstrand Corp. announced.

One important reason for this increase, R. E. Smith, manager of Acrilan fiber sales, said, is blanket manufacturers' styling. Decorative effects achieved by manufacturers, plus ease of laundering, are leading many purchasers to let the blankets serve also as bedspreads.

Zefran To Be Introduced In Fall Garments

Zefran, Dow Chemical Co.'s new acrylic-alloy fiber, will be shown in men's, women's, and children's luxury-fabric clothing for fall.

Fabrics of 100% Zefran and blends of Zefran and other fibers will be offered for sale by Talbott Knitting Mills, Worumbo, William Heller, Inc., A. D. Ellis, and several other mills.

Dow expects to be producing Zefran in volume at its new $10-million plant at Lee Hall, Va., by middle or late summer.

Outstanding Zefran qualities are said to be excellent dyeability, resistance to pilling, dimensional stability, wrinkle recovery, soft hand, pleat-and-press retention, washability, and quick drying.

Among fabrics now being shown are:
• Zefran-angora and Zefran-cotton blends for coatings and sportswear
• Zefran-wool blends in twist glen for men's suitings
• Zefran-wool blends in pick-and-pick patterns for suitings
• Zefran-wool blends in fancy and heather jerseys.

Rayon Staple in Carpets

The use of rayon staple fiber in woven and tufted carpets increased 9% last year over 1956, according to the Textile Economics Bureau.

In 1956, carpets accounted for 114,200,000 lbs. of rayon staple. Last year, the totals rose to 124,-300,000 lbs.

Carpet Tradename Ready for Use

Chemstrand Corp. will start early this month the use of its Acrilan Carpet tradename on carpets and rugs that meet the required standards.

Among the requirements for use of the label are:

At least 70% of the face yarn must be of Acrilan.
• The pile must have an average weight based on the average thickness of the pile.

Caprolan Sales Climb

Sales of Caprolan have increased every month this year, Allied Chemical reports.

Fast-growing uses of the heavy-denier (2100-den. and up) filament yarns are in tire cord and in textured form for woven and tufted carpets and rugs.

New Predyed Cotton Yarns

A predyed, wrinkle-resistant-finish cotton yarn, called XX-2, has been announced by Aberfoyle Mfg. Co. The yarn is produced in 12s and 24s and can be furnished in standard cotton, wool, or silk finishes.

The yarn is described as suitable for knitting or weaving. It was developed at Aberfoyle's Rex Mill, Belmont, N. C.

Theme-Printed Crib Sheets

Deering, Milliken & Co. is featuring novelty-printed fitted 80-square crib sheets. Prints of pink and blue on white ground include baby girls with pennants and boys in cap and gown to carry out a "Milliken U" baby-student theme.

Terrycloth Sets

Callaway Mills, Inc., is featuring terrycloth kitchen sets called Trivet and Pots and Pans. A set consists of a dish towel, four place mats, and an apron. Sets are in solid colors —red, pink, green, and yellow— with jacquard borders.

Yarn for Carpet Base

A patent for a new yarn for reinforcing carpeting base has been granted to William Garwood Bacon, Jr., and assigned to E. W. Twitchell, Inc., Philadelphia. The patent number is 2,832,190.

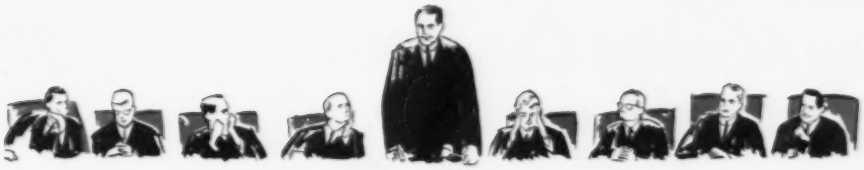
The yarn is made with a core of continuous-filament fiber or of fibrous glass, with an outer covering of twisted paper.

It is said to be stronger than a cotton or jute yarn and is relatively light and highly compressible.

Nylon-Tire-Cord Fenders

Nylon tire cord is finding a new use: reinforcement for tire-like ship fenders to protect the hull of a ship when it bumps a dock or another ship.

Goodyear Tire & Rubber Co. is making the fenders.



In law it's the Supreme Court...

In colored yarns it's Franklin-Dyed

Yes, with nearly half a century of experience, 4 plants, hundreds of dyeing machines in dozens of sizes, winding equipment to match and complete laboratory facilities, we are widely recognized as the ultimate authority on dyeing all types of spun yarns.

And here are other advantages which make us your logical source for yarn dyeing service:

SPECIALISTS

Yarn dyeing is our specialty. We don't dye just to make yarn sales. Our sole objective is to provide the best yarn dyeing service available.

QUALITY

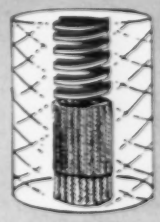
We dye yarns exclusively on the Franklin compressible spring. This permits uniform density of packages, which promotes uniform penetration of the dye liquor and uniform shades.

CONSULTANTS

We can help you with your color problems. Our laboratory facilities, highly skilled technicians and unmatched experience in time, variety and volume are at your service.

CONVENIENCE

Our 4 yarn dyeing plants, in 4 different textile centers, are conveniently yours. Get in touch with our nearest plant or office.



X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

Franklin Process

A DIVISION OF INDIAN HEAD MILLS

Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

Philadelphia • Greenville
Chattanooga • Fingerville, S. C.
Sales Representatives in Providence, R. I.
New York City (1407 Broadway)

7-8

*Trademark for Dupont's acrylic fibre

**Trademark for Dupont's polyester fibre

For more data, write this page number on Reader-Service card. →

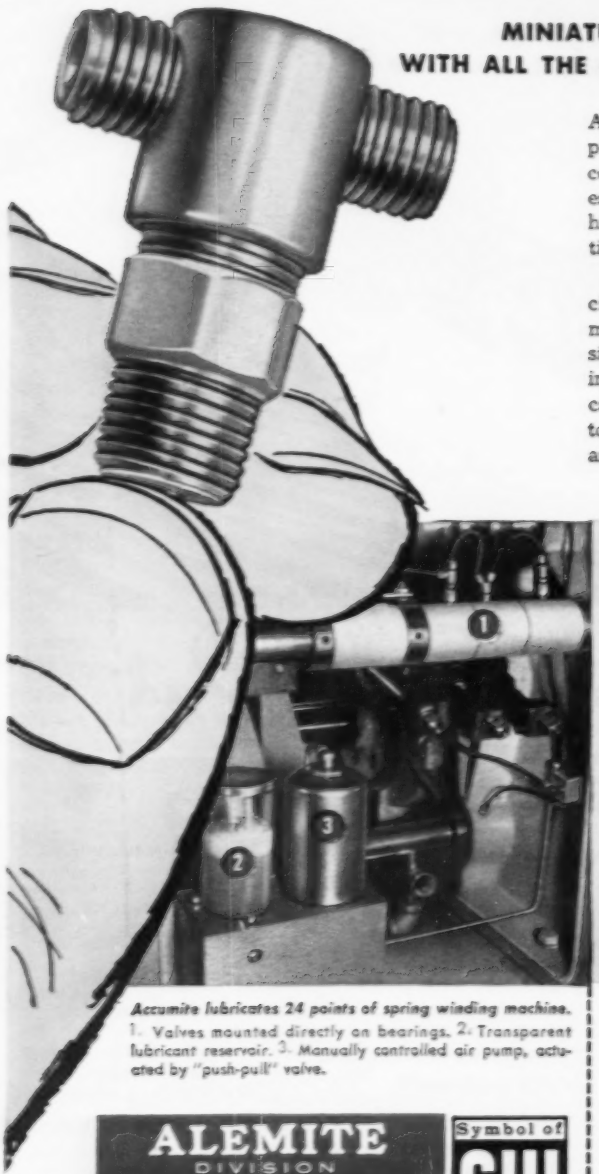
NOW! Any Machine Can Have The Advantages of Centralized Lubrication... At Low Cost!

Alemite "MINIATURE" ACCUMITE System

MINIATURE SIZE FOR LIMITED SPACE—
WITH ALL THE QUALITY OF HIGHER-PRICED SYSTEMS!

Alemite—with 40 years of centralized lubrication experience—announces an all-new miniature system complete with pump, metering valves and controls—especially designed to service many machines and vehicles where centralized lubrication has been impractical until now!

Alemite's new midget-size Accumite system is especially adaptable to light, precision, multiple-bearing machines that have limited installation space. Its small size and simple installation overcomes cost limitations in most plants. Typical applications are: packaging, canning, labeling and textile machines . . . and machine tools. It is also suitable for tractor trailers, lift trucks and farm implements.



Accumite lubricates 24 points of spring winding machine. 1. Valves mounted directly on bearings. 2. Transparent lubricant reservoir. 3. Manually controlled air pump, actuated by "push-pull" valve.

ACCURATELY METERS THESE SHOTS OF OIL OR GREASE

.003 cu. in. .006 cu. in. .009 cu. in.

ALL THE ADVANTAGES OF "BUILT-IN" MEASURED LUBRICATION—PLUS MIDGET SIZE!

- Meters exact amounts of refinery-clean lubricants to all bearings whenever system is operated.
- Eliminates shutdown time for lubrication.
- Seals lubricant against dirt, grit and water.
- Prevents bearing troubles due to neglect or use of wrong lubricants.
- Services all bearings in one operation.
- Avoids work spoilage and bearing repairs due to overlubrication.

Mail coupon for full information!

ALEMITE
DIVISION
STEWART-WARNER
CORPORATION

Symbol of SW Excellence

1850 Diversey Parkway, Chicago 14, Ill.

ALEMITE, Dept. X-68
1850 Diversey Parkway, Chicago 14, Ill.

Please send me all the facts about your new "Miniature" Accumite system.

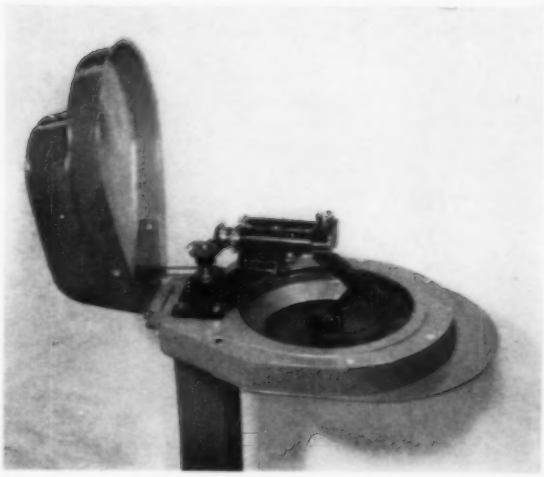
Name_____

Company_____

Address_____

City_____ Zone____ State_____

← For more data, write this page number on Reader-Service card.



Card and Comber Coilers

A line of antifriction coilers for cards and combers has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Sizes range from 14- to 18-in. diameter for cards and 14- to 16-in. diameter for combers. Coilers for both machines are available in 36- and 42-in. heights.

The card and comber coilers are similar in design except for drive and mounting details. The major improvement over older models is that the gear is supported by three roll assemblies with antifriction bearings.

Another change is the use of an over-center lay instead of the usual short-of-center lay. This arrangement produces a more-uniform pattern and prevents tangling. Trunk and turn-table units also have been improved.

Circle T-1 on Reader-Service Card

Antiwedge Spinning Ring

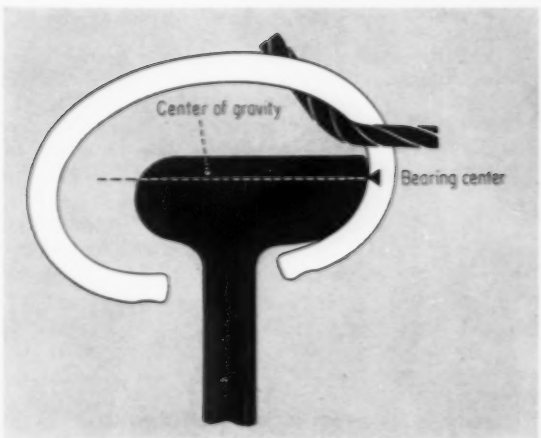
An antiwedge spinning ring with a special flange for elliptical travelers has been announced by Whitinsville Spinning Ring Co., Whitinsville, Mass.

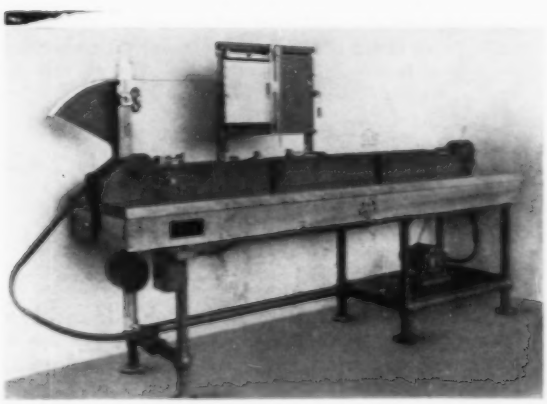
The flange is flattened at the top, and the inner radius is contoured to fit the curve of the traveler.

The bearing center of the traveler is higher than on regular rings, and the web is offset toward the outside of the flange instead of being centered.

The traveler floats without wedging the yarn or touching the web. Increased traveler life is claimed because: (1) the flange provides an increased area of contact with the traveler and produces less pressure and heat, and (2) the offset web keeps the traveler from burning and the ring from wearing.

Circle T-2 on Reader-Service Card



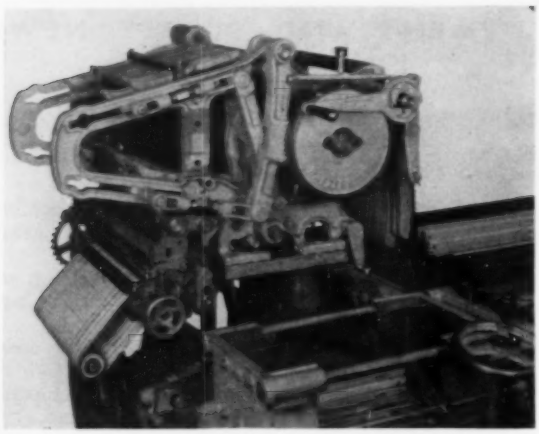


Tensile-Testing Machines

Autographic fiber-tensile-testing machines are now available on special order to customers' blueprints from Abrasive Machine Tool Co., Custom Contract Div., East Providence, R. I. The equipment automatically records the stretch in fractions of inches and the breaking point in pounds and ounces of any-size tire cord.

The instrument is powered by a ¾-hp. motor, and a precision-cut screw provides an even stretch for precise recording.

Circle T-3 on Reader-Service Card



Cam Dobby

A nonpositive cam dobby with a paper reading pattern mechanism has been announced by Geo. Hattersley & Sons Ltd., Keighley, England.

The pattern cards are interchangeable. They have pitches of 10 or 12 mm. for 16, 20, 25, and 28 shafts or harnesses. The patterns take up very little room. Only 1 ft. of paper is required for 100 picks on the single cylinder mechanism, but a double cylinder can be furnished if desired.

The feeler needles contact the pattern by gravity and eliminate the possibility of the needles jamming and puncturing the paper.

Circle T-4 on Reader-Service Card

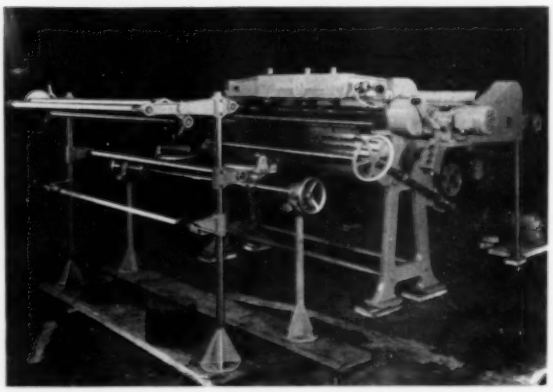
Ribbon-Slitting Machine

A machine in 40- and 55-in. widths for slitting ribbons is announced by Leo Sistig Maschinenfabrik, Krefeld, Germany. American representative is Krehbiel Corp., Box 612, Hillside, N. J.

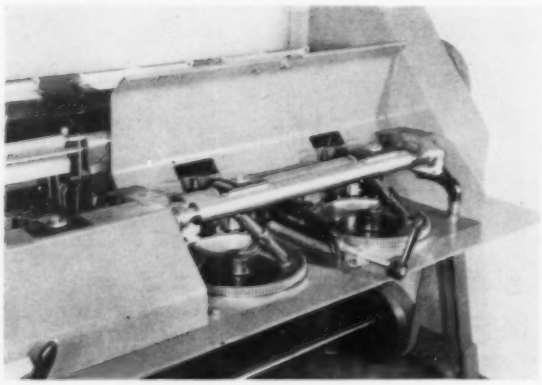
The machine can be supplied with a glue trough for cold cutting glued-edge ribbon or for hot cutting fused-edge acetate ribbon.

The temperature of the electrically heated circular knives can be varied and is maintained by thermostatic control.

A variable-speed drive gives a speed range of from 5 to 20 yds. per min. The machine can slit ribbon to a minimum width of ¼ in.



Circle T-5 on Reader-Service Card



Drawing-Frame Coilers

Large coilers that can be attached to 16- and 18-in.-gauge drawing frames have been introduced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

The coilers are 14 and 15 ins. in diameter and 36 or 42 ins. high. The coiler gear, of new design, increases the capacity of the can.

A special feature is a machined ring on the can table that supports a similar ring, which is part of the turntable gear. These rings distribute the load over a large bearing surface instead of concentrating it on the usual small spindle.

Circle T-6 on Reader-Service Card

Heavy-Duty Floor Seal

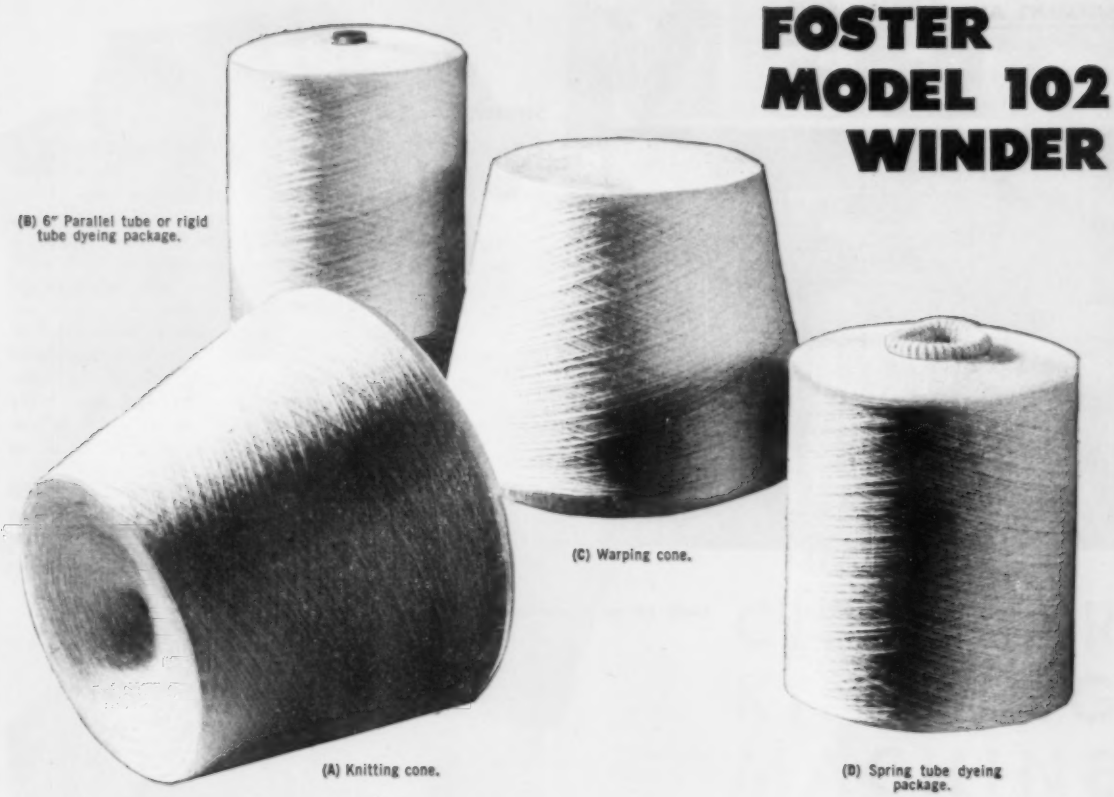
A highly abrasive-resistant floor seal that lasts twice as long under heavy traffic as the company's previous heavy-duty finishes has been developed by G. H. Tennant Co., 721 N. Lilac Dr., Minneapolis 22, Minn.

The material, No. 15, provides a light semilustrous film. Characteristics are high resistance to: rubber and friction burns, abrasion, and moisture and dirt penetration.

Since the finish is alkali resistant, it is effective on both wood and concrete floors. It is fast drying and does not require a separate primer. Three coats are needed.

Circle T-7 on Reader-Service Card

FOSTER MODEL 102 WINDER



ONE OF MANY FLEXIBILITY FEATURES

Illustrated above are four different types of packages which may be wound on the Foster Model 102, when it is properly equipped. This is only one feature of the machine's flexibility. Others are as follows:—

1 NINE ANGLES OF WIND from 9° to 18°, simply by changing 4 small gears in the head of the machine. A great asset in these days when types and counts of yarn may be changed overnight.

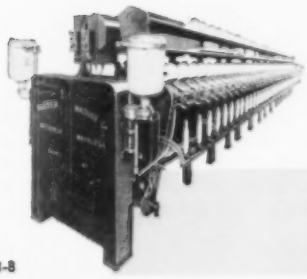
2 ANY CONE TAPER ordinarily used. Furthermore, the gradually increasing taper of Model 102 cones, as they build up, assures free delivery at the knitting machine and equalized tension at all diameters.

3 TRAVERSES — 3" to 7". Machine can be equipped for traverses ranging from 3" to 7". The 7" traverse cone holds 10% more yarn than a 6" traverse cone and is finding increased acceptance in coarse count cotton mills and wool and worsted mills.

4 VARIETY OF SUPPLY ATTACHMENTS, such as tilting bobbin holder for extra long bobbins or paper cops, holders for large spinning package supply and runner reels for winding from skeins.

5 YARN CONDITIONING ATTACHMENT. Optional. Can be readily added at any time. Gives any degree of conditioning desired without reduction in winding speed.

6 VARIETY OF TENSION SLUB CATCHING AND WAXING ATTACHMENTS. All self threading and each designed for a special purpose.



Flexibility is only one part of the Model 102 story. Find out about its increased production over obsolete machines. Find out why Foster Model 102 cones are "standard for the knitting trade". Send for Bulletin A-95-A.

FOSTER MACHINE COMPANY

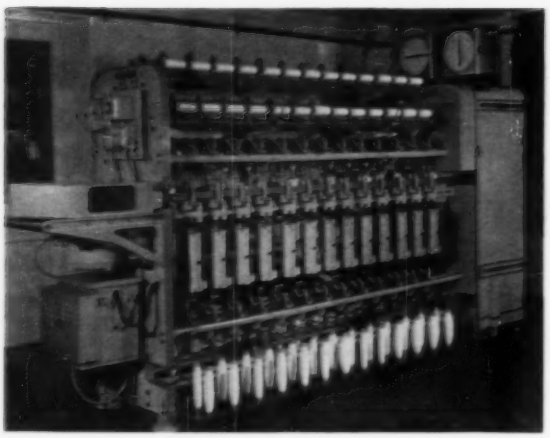
WESTFIELD, MASSACHUSETTS, U.S.A.
Southern Office, Johnston Bldg., Charlotte, N. C.

CANADIAN REPRESENTATIVE
ROSS WHITEHEAD AND CO., LTD.
1475 Mountain St., Montreal, Que. and
100 Dixie Plaza, Port Credit, Ontario

EUROPEAN REPRESENTATIVE
MUSCHAMP TEXTILE MACHINERY LTD.
Keb Lane Bardsley, Oldham, England

148-8

For more data, write this page number on Reader-Service card. →



Stretch-Yarn Machine

The CrimpSpin 3 machine built by Ernest Scragg & Sons Ltd., Macclesfield, England, has 240 spindles mounted in pairs. Each pair is fed from a twin heater unit. The production increase over the CrimpSpin 1 machine is 70% although it occupies the same space.

The take-up package has been increased by 20% with a change in gauge from 5½ to 6½ ins. The heater units have been increased from 9 ins. to 12 ins.

The temperature of the heater units is maintained at any desired level by an electronic thermostat capable of accepting heavy fluctuations in supply voltage. An automatic scanning system measures the temperature of every heater unit four times an hour. An alarm signal is provided to give a warning at temperature differentials as low as ±1° C.

There are two banks of take-up mechanisms with 120 in each bank. The output of each spindle may be fed to its own individual take-up package, or the yarn from each pair of spindles may be wound on a single cheese.

Circle T-8 on Reader-Service Card

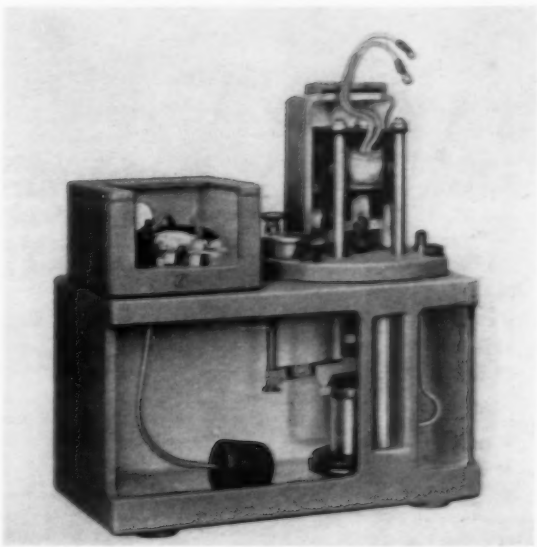
Automatic Lubricator

A solenoid-operated lubricator for machine bearings is being sold by Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J. The lubricator has been rated for 6-million cycles, or about 10 years of use.

As many as 20 average bearings can be lubricated by a single unit. Either a 3- or 6-pt. reservoir may be used. Precisely measured oil is discharged through meter units.

The solenoid is adaptable to three types of control: (1) a push button or foot switch for manual control, (2) the machine's circuit or a contact or limit switch governed by the machine's cycle provides integrated automatic control, or (3) remote automatic control from an electric timer.

Circle T-9 on Reader-Service Card



Automatic Needle Positioner

A mechanically operated automatic needle positioner that can be used with all types of sewing machines has been developed by Lewis Sewing Machine Co., 315 W. 35th St., New York 1, N. Y. The device automatically stops the needle in or out of the material and eliminates the need of the operator to turn the handwheel at the end of each stitching operation. The unit is mounted out of the way underneath the table.

Circle T-10 on Reader-Service Card

Braided Air Hose

A braided hose for air, liquids, and hydraulic systems has been developed by Goodyear Tire & Rubber Co., Inc., Industrial Products Div., Akron 16, Ohio. It is made in long lengths that have dimensional stability.

This hose lessens the danger of pulling off in use because it will not shorten under pressure. A great temperature range is possible since the braid angle of the hose is constant.

Circle T-11 on Reader-Service Card

MERC

NEW · IMPROVED

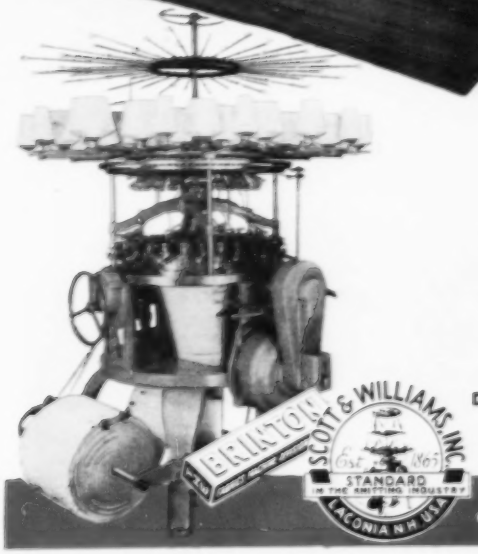
The Only

HIGH – SPEED

CIRCULAR KNITTING MACHINE

•• that will knit vertical striped fabric in the interlock body with solid color rib cuffs, – as well as plain fabric in solid colors.

IN GREAT QUANTITIES CONTINUOUS PRODUCTION



Designed, Manufactured, Sold and Serviced by

SCOTT & WILLIAMS, INC.

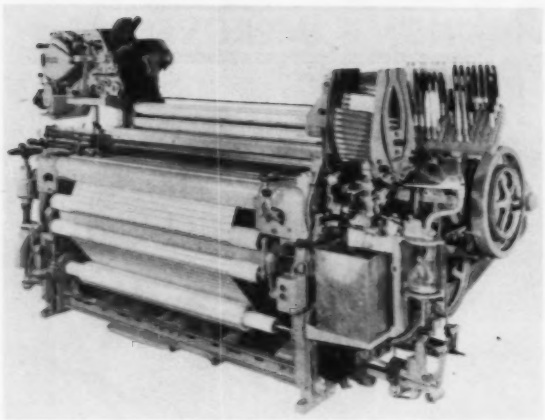
Main Offices and Plants: LACONIA, NEW HAMPSHIRE

Sales Office: Empire State Building, New York 1, N.Y.

Divisional Offices: High Point, N.C., Reading, Pa., Chattanooga, Tenn.

Send for Complete Information

For more data, write this page number on Reader-Service card. →



Automatic Silk Loom

A multishuttle, bobbin-changing automatic silk loom has been announced by Ruti Machinery Works Ltd., Ruti, Switzerland.

The loom has an electromagnetic battery control and will handle up to four colors of filling. The battery will hold 76 bobbins, and partly filled bobbins are changed without trouble.

The drop-shaped battery will handle a wide range of filling. An adjustable feeler makes it possible to keep waste to a minimum because only a small thread reserve is needed. The bobbins are changed by a gentle sliding action, and the hammer is made of Lignostone.

The first pick after bobbin change is threaded and has the same tension as other picks. Outside scissors and vacuum adapter prevent drag-ins at the bobbin change.

The cloth take-up can be quickly altered from indirect to direct operation. An automatic warp let-off compensates for the slightest variation in warp tension.

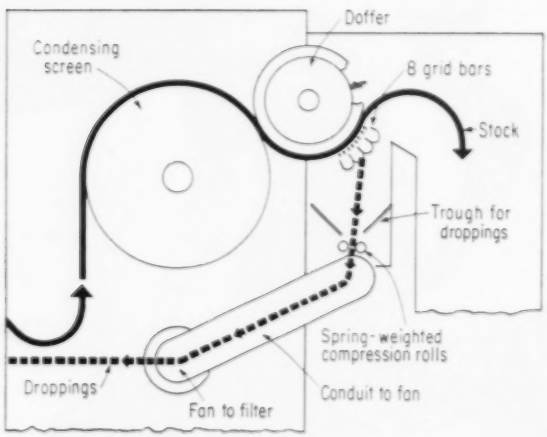
Circle T-12 on Reader-Service Card

Auxiliary Cleaning Unit

An automatic auxiliary cleaning unit to provide extra cleaning at the No. 11 dust and waste extractor has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. The unit was designed especially to clean 1957 cotton without extra beating.

The cleaner has a pair of spring-weighted rolls and eight adjustable grid bars that fit under the No. 11 doffer, which is reversed by crossing the driving belt. The rolls form an air seal and pass the droppings through a conduit to the No. 11 fan where they are combined with the regular dust from the condensing screen.

The cleaner can be attached to either floor- or ceiling-mounted extractors and can be used as a feeding unit for most opening equipment. Installation is easy, and automatic features are optional.



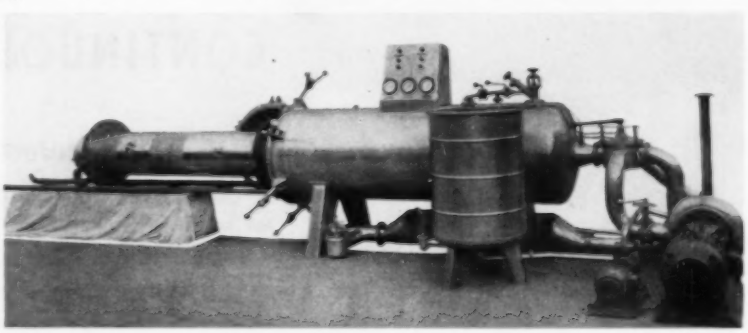
Circle T-13 on Reader-Service Card

Pressure Vessel for Fabric Dyeing

Fabrics may be dyed under pressure at temperatures up to 275° F. in a machine introduced by Industria Lavoraziani Metalli Antiacidi, Schio, Italy. Stellamcor, Inc., 60 E. 42nd St., New York, N. Y., is the U. S. representative.

A pressure vessel is used to accommodate a perforated beam on which the fabric to be dyed is wound. Static pressure is supplied by a pumping system that also includes provision for introducing dye liquor while the machine is at full pressure.

A separate pumping system circulates dye liquor through the fabric. Reversal of liquor flow is controlled automatically.



The equipment is made from 316 AISI stainless steel throughout. All the necessary controls for operating the machine are grouped on one panel.

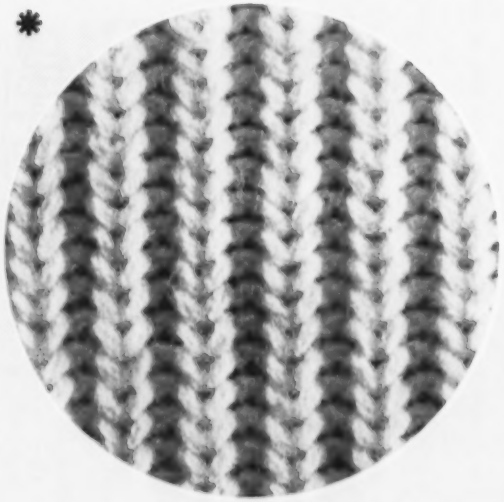
Circle T-14 on Reader-Service Card

3 . . . . *three different bulkie stitches** are now available on . . . .

LEIGHTON BULKIE KNITTERS

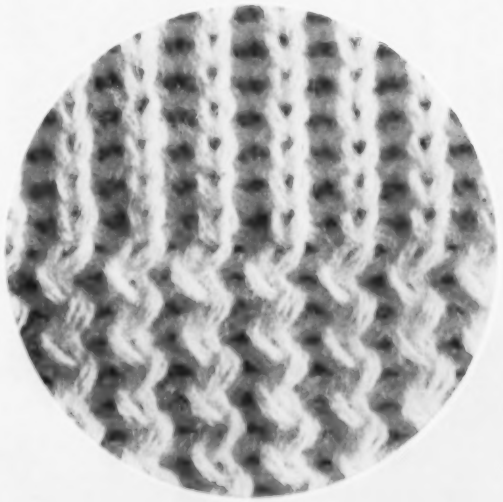
SIMPLY - By Chain Manipulation

*



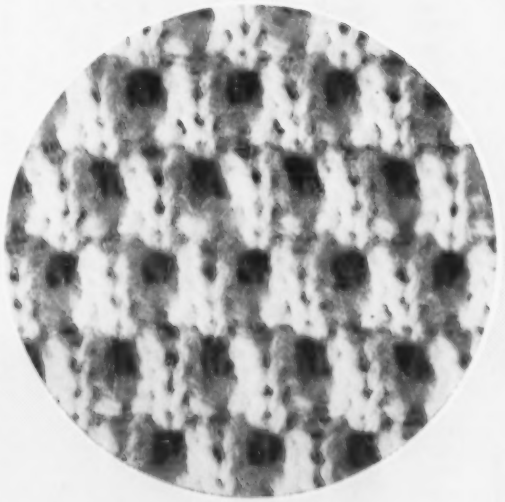
No. 1 Half Cardigan

Illustration above shows actual size stitch and is available in three color stripes. 2½ to 5 cut.



No. 2 Full Cardigan

Illustration shows actual size of full cardigan stitch with single needle rack.



No. 3 Nubb (Pineapple)

Illustration above shows actual size of stitch produced by tuck four and knit twice. Rack on the knit stitch.

LEIGHTON MACHINE COMPANY

· · · MANCHESTER, NEW HAMPSHIRE · · ·

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

For more data, write this page number on Reader-Service card. →

Pressurized Hank-Dyeing Machine

A machine designed to dye hanked yarn at temperatures up to 226° F. has been marketed by Industria Lavoraziani Metalli Antiacidi, Schio, Italy. Stellamcor, Inc., 60 E. 42nd St., New York 17, N. Y., is the U.S. representative.

The standard model consists of a pressure vessel equipped with a heat exchanger, a side tank for the introduction of dye liquor, and a pumping system to provide static pressure. A perforated bottom insures even distribution of dye liquor, which is circulated in the closed system by a separate propeller mounted beneath the false bottom.

The yarn is carried on a removable carrier. All parts of the machine that come in contact with dye liquors are made from 316 AISI stainless steel. Standard models are available in sizes to accommodate 15, 25, 50, and 100 kilograms of yarn.

Circle T-15 on Reader-Service Card

Submersible Motors

Electric motors for direct coupling to pumps that operate continuously submerged in oil, water, or liquid chemicals have been introduced by Reliance Electric & Engineering Co., 24,701 Euclid Ave., Cleveland 17, Ohio.

The polyphase, single-voltage, submersible motors are available in sizes from ¾ through 15 hp. A universal mounting flange connects directly to most standard pumps, and modifications can be made to meet special dimensional requirements.

These pressureproof motors are rated at 50° C. temperature rise for 30-min. duty in 40° C. air and for continuous duty in 40° C. liquid.

Circle T-16 on Reader-Service Card

Improved Spinning Frame

Improvements in the M-1 spinning frame (25 ins. wide) have been announced by Roberts Co., Sanford, N. C. New features include:

1. A creel that handles 10x5 double roving on 3½-in.-gauge frames and 12x7 single roving on 3-in.-gauge frames
2. A simplified ball-bearing top-roll suspension that eliminates part or all of the cap bars
3. A 45° angle for roll stands that improves yarn tension
4. Balloon-control rings (standard equipment) that are traversed independently of the ring rail
5. Ball bearings in the undercarriage and builder motion
6. Finger brake (optional) for ball-bearing spindles
7. Choice of a 9-in.-dia. individual-drive pulley or an 8-in.-dia. cylinder
8. Totally enclosed motor with a special cooling system to eliminate hot spots in the room; a combination starter keeps the motor from running unless the suction-cleaning motor also is running.

Circle T-17 on Reader-Service Card

Roll-Skip Meter

The Shirley R. S. meter detects roll skip and indicates the percentage of difference in speeds between the top and bottom rolls of a spinning frame on a dial. Good drafting conditions are established and maintained when the relative speeds of rolls are known. The meter helps determine the best roll settings. Atkinson, Haserick & Co., Inc., Framingham, Mass., is U. S. agent for the meter.

Circle T-18 on Reader-Service Card

CONTINUED ON PAGE 156

Report from Du Pont:

Metallic yarns made with MYLAR® offer production efficiencies never possible before!

Q *Can they be run unsupported?*

A YES. "Mylar"* polyester film is 50 to 200% stronger, with 10 to 15 times the flex life of other films used for metallic yarns. Since the yarn is much stronger, breakage problems are virtually eliminated . . . your looms and knitting machines run smoothly. And only metallic yarns made with "Mylar" (metalized type) can be used with electrical stop motion devices.

Q *Can they stand up in finishing?*

A YES. "Mylar" resists solvents, water and most acids and alkalies. And because "Mylar" is heat-resistant, metallic yarns made with this durable polyester film can withstand temperatures over 300°F. You can heat-set fabrics . . . fabrics can be bleached, dyed and cross-dyed in the piece at boil.

Q *Are they more expensive to use?*

A NO. Metallic yarns made with "Mylar" often cost less than other types of metallic yarns. Because "Mylar" is strong even in thin gauges, the yield in 1,000 linear yards per pound can be 1½ to 3 times greater. Where unsupported metallic yarns made with "Mylar" are used to replace supported metallic yarns, your cost savings are even more apparent. In all cases, metallic yarns made with "Mylar" perform better in weaving, knitting and finishing.

Q *Can they withstand machine washing?*

A YES. Metallic yarns made with "Mylar" resist heat, water and most chemicals. If the other yarns in a finished fabric can withstand machine washing, drycleaning or steam ironing, so, too, can the *non-tarnishing* metallic yarn made with durable "Mylar" film.

And metallics made with MYLAR® help you sell more fabric

Metallic yarns made with "Mylar" add elegance and sales appeal to any fabric, just as metallics of old. The big difference is found in *performance*... better performance in manufacturing and better performance—meaning greater consumer appeal—in the fabric.

Metallic yarns made with "Mylar" are soft, washable and last the life of a fabric. They now come in a wide range of decorator colors. All of these important features mean greater sales appeal at the retail level.

Du Pont manufactures "Mylar" polyester film, the base material that helps make this new and highly improved metallic yarn possible. For detailed information on performance, yield and costs, check your metallic-yarn supplier. Or write today for a 20-page Du Pont booklet on facts about metallic yarn made with "Mylar".

*"Mylar" is a registered trademark for Du Pont's brand of polyester film.

Metallic Yarn made with DU PONT MYLAR® POLYESTER FILM

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Film Dept., Room TW-6
E. I. du Pont de Nemours & Co. (Inc.)
Wilmington 98, Delaware

☐ Please send your 20-page booklet on facts about metallic yarn made with "Mylar" polyester film.

☐ Please send a list with names of suppliers of metallic yarn made with "Mylar".

*Name*_____ *Title*_____

*Firm*_____

*Address*_____

*City*_____ *State*_____

*Specific interest*_____

For more data, write this page number on Reader-Service card. →

The Hibbert Flexible system of sizing

This booklet describes how flexible the Hibbert system can be and adequately covers all equipment used in the processing of fibres and filament yarns from a starch preparation to weaver's beam. Please address requests for copies to:

JOSEPH HIBBERT & CO LTD
CENTURY WORKS • DARWEN • ENGLAND

J·H

Agent: Atkinson, Haserick & Co., 211 Congress Street, Boston, Mass., U.S.A.

← For more data, write this page number on Reader-Service card.

bedspreads
blankets
tablecloths
and towels
look better
sell better
touched with
glittering...

FAIRTEX® YARNS

METALLIZED MYLAR* · METALLIC · SUPPORTED METALLIC

Fairtex with Foil or Metallized Mylar* yarns woven into fabrics for towels, tablecloths, bedspreads, blankets and sheets add the luxury look!

They look better and sell better because the vibrant beauty of Fairtex Metallics stops the eye and starts the sale!

Fairtex Yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

As "soft-as-silk" to the touch, they are smooth, pliable and uniform and do not flake or break.

Fairtex Yarns never lose their glittering glamour and outlast even the fabric itself.

FAIRTEX CORPORATION • Charlotte, N. C.

CHICAGO:
William Napier, 3555 Peterson Avenue

NEW YORK:
Robert Napier, 51 E. 42nd Street

CHARLOTTE:
Lanier Branson, Jr. and J. E. MacDougall, Jr., 1808 Liberty Life Bldg.

PHILADELPHIA:
William A. Popp & Associates, 3701 N. Broad Street

2952

For more data, write this page number on Reader-Service card. →

Stainless Steel

QUICK WAY to reduce electrical raceway maintenance in highly corrosive atmospheres to a minimum is to install Republic "Dekoron-Coated" Electrical Metallic Tubing or Rigid Steel Conduit. A tough, polyethylene coating over a galvanized finish gives you double protection against corrosion from outlet to outlet. Installation is easy. Joints are sealed with plastic tape. "Dekoron-Coated" E.M.T. and Rigid Steel Conduit cost less because they last longer. Mail coupon for details.

← For more data, write this page number on Reader-Service card.

Permits Quick Color Changes

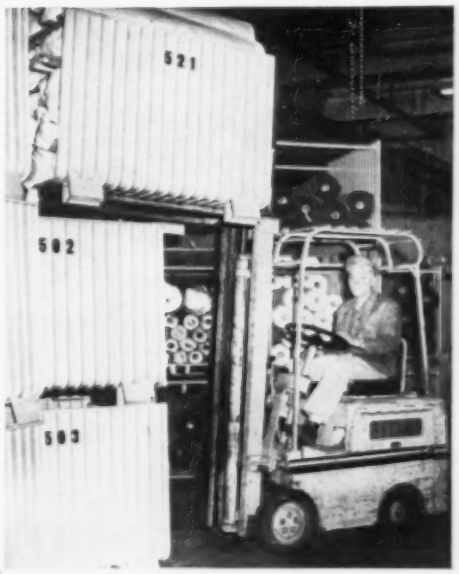
Easy-clean qualities of textile equipment fabricated from Republic ENDURO® Stainless Steel make possible quick color changes and economical processing of small runs.

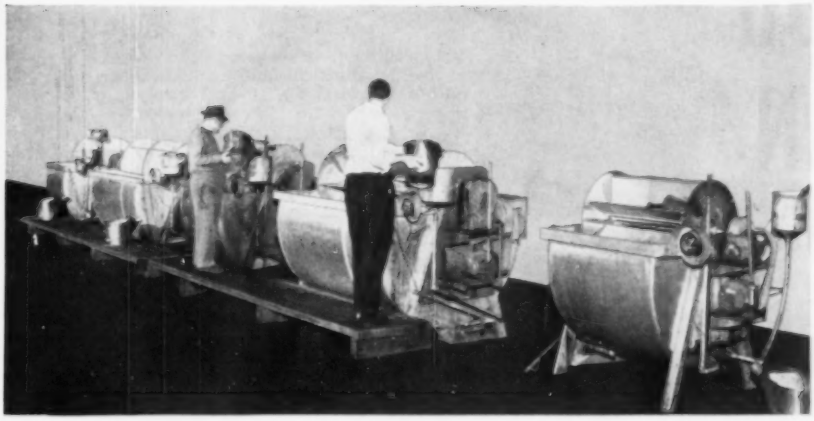
Stainless steel is easy to clean and to keep clean. A water rinse quickly restores its smooth, hard surface to sparkling cleanliness. There is no need for expensive boil-outs—no need for using caustic, reducing, or oxidizing agents to remove dyes.

There is no danger of off-colors caused by metallic oxides. ENDURO Stainless Steel stubbornly resists rust and corrosion. It is non-contaminating. It does not react with or absorb dye-bath chemicals or peroxide bleaches. Considerably smaller quantities of these chemicals are required to maintain necessary concentrations.

Flexibility is still another advantage of stainless steel equipment. You can use the same equipment for dyeing, rinsing, or bleaching. In fact, the use of stainless steel made possible the continuous bleaching process. ENDURO Stainless Steel is the metal that assures true dyed colors and pure bleached whites. It's the metal that's safe for the most delicate colors and fabrics. Your equipment supplier has more facts. Or send us the coupon.

This example of the advantages of stainless steel is brought to you by Republic Steel in behalf of the stainless steel equipment manufacturers and the Republic Stainless Steel Distributors—your local steel service centers.





QUICK HANDLING and simplified storage at reduced cost are the results of this special materials handling equipment developed by Republic's Berger Division for a dye house. Open-end construction of the boxes permits easy access to bolts of cloth. Offset channels under each unit allow tiering, save space. Four-way entry permits easy handling in limited space. Send coupon for more facts.

QUICK COLOR CHANGES are but one advantage of equipment made from Republic ENDURO Stainless Steel. Here is a metal that produces immediate savings in maintenance and cleaning costs. Produces long-range savings in extended equipment life. ENDURO is the metal that can help you achieve faster production, lowered costs, higher quality.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORPORATION
DEPT. TW-5114
1441 REPUBLIC BLDG. • CLEVELAND 1, OHIO

Send more information on:

☐ ENDURO Stainless Steel ☐ Materials Handling Equipment
☐ "Dekoron®-Coated" E.M.T. and Rigid Steel Conduit

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

For more data, write this page number on Reader-Service card. →

Whatever you buy
IN TEXTILES "made in U.S.A."
gives quality you can trust

Stickers for your mail are offered at no charge. Large quantities at cost as a public service.

NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Pump motors—From ⅛ to 1,000 hp. discussed in Bulletin B-2507 from Reliance Electric & Engineering Co. (F-1)

Tachometers—For many applications described in booklet 58 from Jones Motorola Corp. (F-2)

Induction motors—In NEMA frame sizes of 1 to 100 hp. listed in Bulletin No. 1900 from Louis Allis Co. (F-3)

Infrared instrumentation—And spectrophotometers for qualitative and quantitative analyses described in Bulletin 724 from Beckman Scientific Instruments Div. (F-4)

nstrument repair—Folder gives details of repair services available from Leeds & Northrup Co. (F-5)

Demineralizers—And their basic principles of operation in water treatment described in Bulletin WC-111A issued by Grover Water Conditioning Co. (F-6)

Hydraulic vibrators and vibration testing—Described in bulletin and reprint from MB Mfg. Co. (F-7)

Temperature control—And allied subjects described in Bulletins 105, 109, and 131 from Niagara Blower Co. (F-8)

Lathes and accessories—Listed in Bulletin 5803 from South Bend Lathe Works. (F-9)

Stationary tachometers—For permanent mounting on machines described in Bulletin No. 795 from Herman H. Sticht Co., Inc. (F-10)

Mechanical force gauges—Complete line described in Booklet 11E from W. C. Dillon & Co., Inc. (F-11)

Speed-measuring systems—For textile, paper, steel, and other machinery described in Bulletin GED-3259 from General Electric Co. (F-12)

X-Ray analysis—Theory and instrumentation covered in booklet from Instruments Div., Phillips Electronics, Inc. (F-13)

SUPPLIES & CHEMICALS

Industrial crayons — Chart showing which special crayons to use to mark industrial materials is available from Joseph Dixon Crucible Co. (F-14)

Flanges and fittings—Technical data

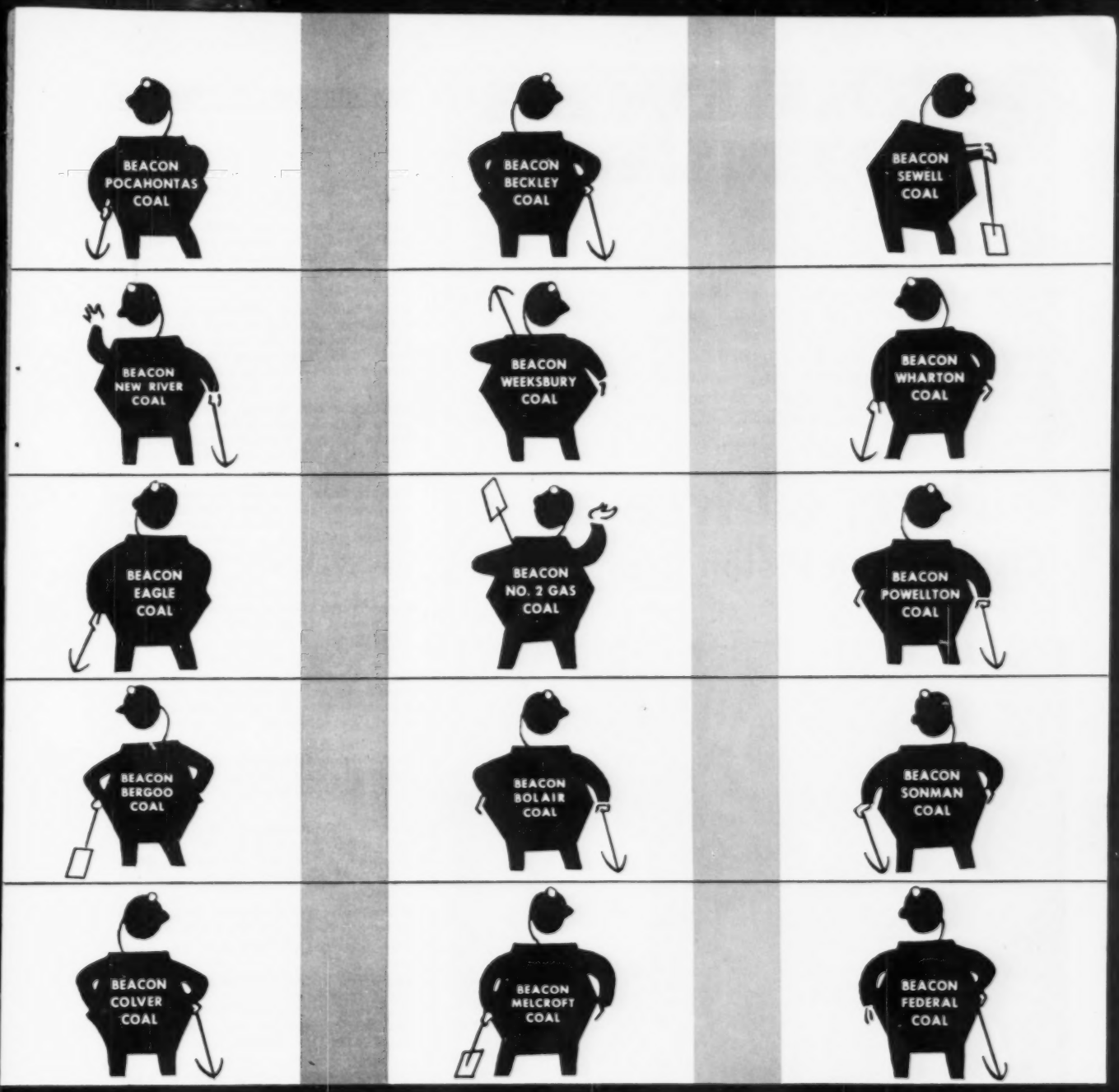
YOU CAN REDUCE YOUR COST

. . . you can process more yards per penny spent for rolls IF you will use the S-W ROLL-GUARD Plan.

S-W

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

STOWE-WOODWARD, INC. Griffin, Georgia · Newton Upper Falls, Mass. · Neenah, Wisconsin



All squared away to serve you—

EASTERN GAS AND FUEL ASSOCIATES
BEACON COAL

EASTERN GAS AND FUEL ASSOCIATES

PITTSBURGH • BOSTON • CLEVELAND • DETROIT • NEW YORK
NORFOLK • PHILADELPHIA • SYRACUSE

For New England: New England Coal & Coke Co. • For Export: Castner, Curran & Bullitt, Inc.

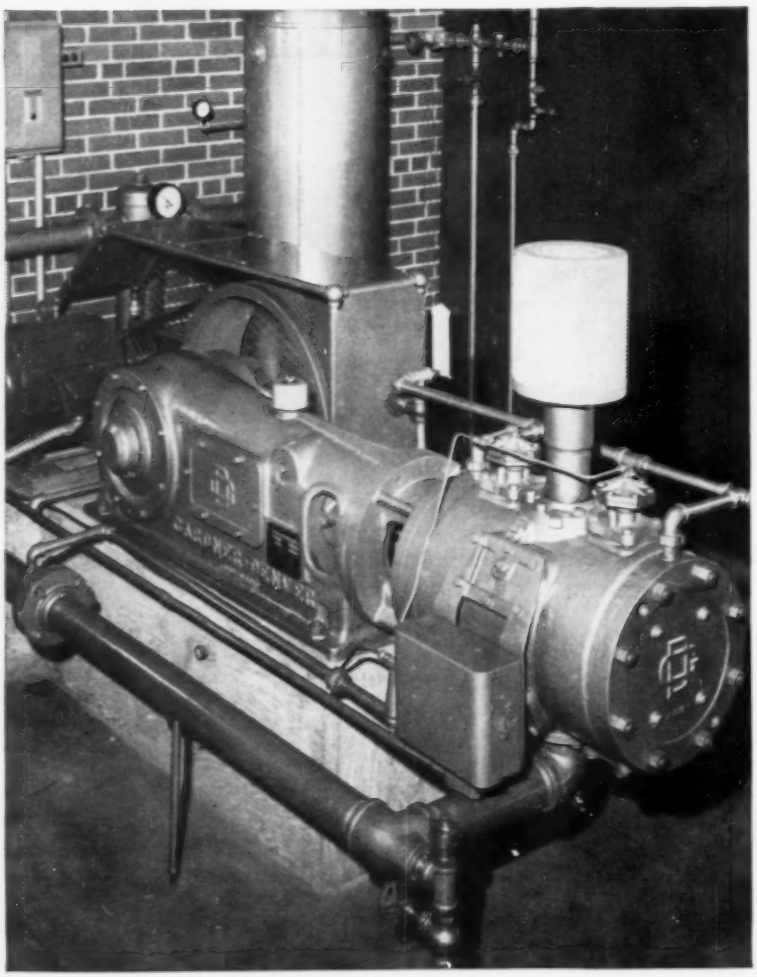
GARDNER DENVER

Pure, oil-free air for processing or instrumentation—that's what you can depend on from the Gardner-Denver CRX compressor. That's because carbon parts in the cylinder—piston, piston rings, packing rings—are made of self-lubricating carbon. No oil or water lubrication is required. Correct cylinder and valve design keeps efficiency high, power cost low. Send for Bulletin CRC-10 today and learn the details.

Stationary air compressors . . . tank-mounted compressor outfits . . . oil-free air compressors . . . whatever your compressed air needs, see your Gardner-Denver compressor specialist first. Gardner-Denver Company, Quincy, Illinois.

Pure, oil-free air

CRX Carbon Piston Compressor



cards on seamless welding fittings and forged steel flanges are available from Tubular Products Div., Babcock & Wilcox Co. (F-15)

Aluminum-coated steel—Detailed information on mechanical properties and other characteristics of Aluminized Steel Type 2 in manual from Armco Steel Corp. (F-16)

Stainless-steel tubing and pipe—Described in technical data card 148A issued by the Tubular Products Div., Babcock & Wilcox Co. (F-17)

Polyethylene glycols—The properties, applications, storage, specifications, and testing of Carbowax polyethylene glycols described in booklet from the Chemicals Dept., Union Carbide International Co. (F-18)

Carbons and other products—Described in booklet from Atlas Powder Co. (F-19)

Crystalline material — Called Pyroceram, in tubing and plate form, described in Booklet PY-2 from Corning Glass Works. (F-20)

Industrial brushes—For hand and machine use described in catalog from S. A. Felton & Son Co. (F-21)

Textile chemicals—A 28-p. booklet summarizing textile applications for organic chemicals available from Union Carbide International Co. (F-22)

Glycol esters—Of higher fatty acids described in catalog from Glyco Products Co., Inc. (F-23)

Industrial hose—Construction, service, sizes, pressures, weights, and fittings described in catalog sections from Manhattan Rubber Div., Raybestos-Manhattan, Inc. (F-24)

Textile starches—Described in technical data sheet from Staley Mfg. Co. (F-25)

Pyrometer supplies — Described in Buyer's Guide G100-8 from Minneapolis-Honeywell Co. (F-26)

MAINTENANCE & ENGINEERING

Mercury lamps—Its entire line of mercury lamps listed and described in publication from General Electric Co. (F-27)

Metering pump — Controlled-volume metering pumps described in Bulletin No. 1157 from Milton Roy Co. (F-28)

Couplings—Suited to more than 150

service applications described in bulletin from T. B. Wood's Sons Co. (F-29)

Rubber-covered rolls — Pocket-size booklet, "How to Get Longer Life and Better Performance from Rubber-Covered Rolls," available from Stowe-Woodward, Inc. (F-30)

Stainless-steel fittings and couplings—Described in catalog from Vanton Pump & Equipment Corp. (F-31)

Arc welding—Cable connections and accessories listed in catalog from Tweco Products, Inc. (F-32)

Selector switch—Assemblies described in Data Sheet 86b from Micro Switch. (F-33)

Control valve—Bulletin 275 describes new speed control valve available from Hanna Engineering Works. (F-34)

Pump radial loads — What causes them, how to measure them, and how their effects are controlled are explained in a booklet available from Peerless Pump Div., Food Machinery & Chemical Corp. (F-35)

Indicating-controlling pyrometer—Described in bulletin from Illinois Testing Laboratories, Inc. (F-36)

GENERAL

Corrugated boxes—A new edition of "How to Specify Corrugated Boxes" is available from Hinde & Dauch. (F-37)

"Resisting Business Contraction"—Is the title of a study of present economic conditions and is available from the Chamber of Commerce of the United States. (F-38)

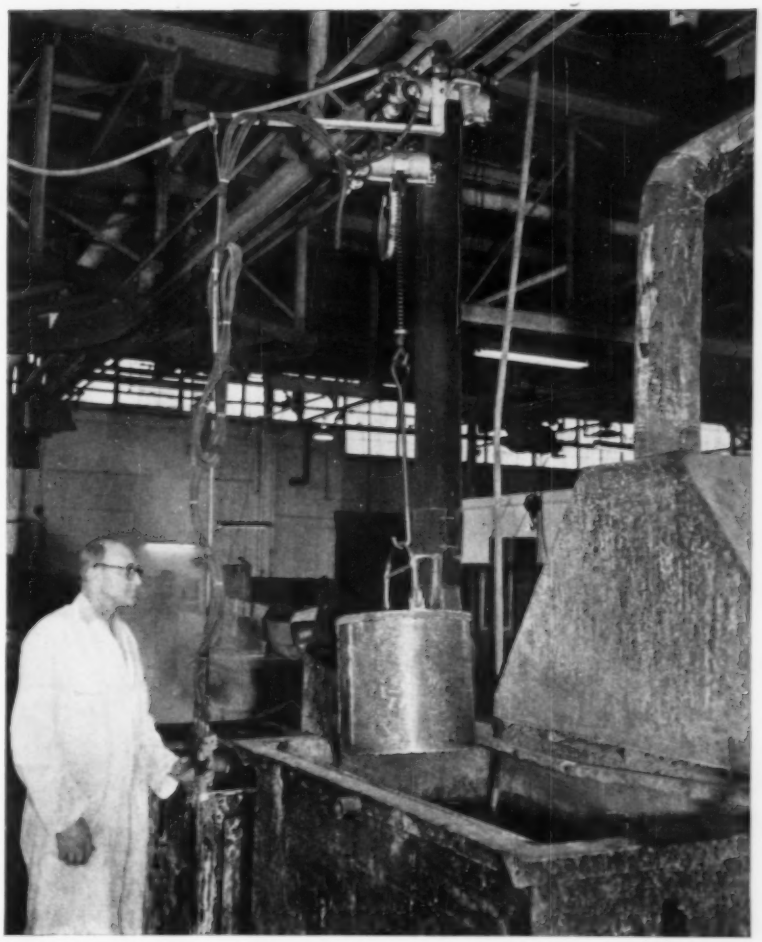
Aluminum parts—And equipment used in textiles are described in a booklet available from Kaiser Aluminum & Chemical Sales, Inc. (F-39)

Electronic computer — Manual tells how factory job time can be calculated and reconciled with attendance time on Univac computer. Published by Remington Rand Univac Div., Sperry Rand Corp. (F-40)

Screen process—Printing for packaging described in folder from Color Reproductions, Inc. (F-41)

"Rules for Safety"—Is the title of a new publication available from National Safety Council. (F-42)

Barrel Rack—Brochure tells how barrel racks permit the handling of stacked or empty barrels and steel drums with standard fork lift trucks.



New Hoistractor

does the pushing and pulling

Let air muscle replace your tug-shove methods of moving heavy hoist loads. The new air-powered Keller Hoistractor can provide any beam hoist with the push-pull power needed to make load spotting and moving an easy task. It connects to the hoist by drawbar, rides the same beam . . . can move loads up to two tons. One simple hand control provides instant command of both "up-down" and "push-pull" operations.

Write for Bulletin 87-1 for complete details.

ENGINEERING FORESIGHT—PROVED ON THE JOB
IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING

GARDNER DENVER

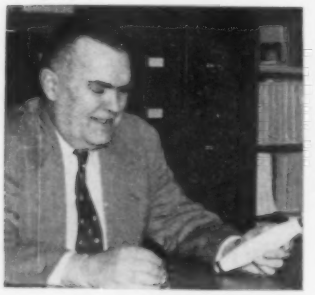
Gardner-Denver Company, Quincy, Illinois

Branch Offices: Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.

For more data, write this page number on Reader-Service card. →

(Advertisement)

WHAT YOU SHOULD KNOW ABOUT STARCHES*



WATER SORPTION of CORN STARCH

by J. M. SEITZ
Director of Research
The Hubinger Company

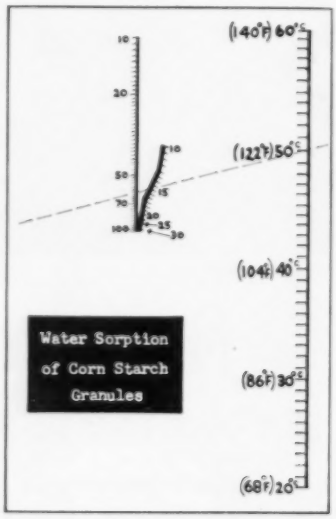
The equilibrium moisture content of corn starch at various temperatures and relative humidities are most important considerations in storage.

Corn Starch, which has one of the lowest moisture equilibrium contents of any of the starches, when shipped from the refiners plant will normally contain 10 to 12% moisture (as is basis). The starch is normally packed in 100 lb. or 140 lb bags. Therefore, after packing, if the moisture equilibrium content changes plus or minus 2%, the bag when received will weigh 102 or 98 pounds basis 100 pounds.

The nomograph (shown right) facilitates a quick check of the hygroscopic moisture equilibrium of corn starch over a temperature range of (68-140°F), 20-60°C.

Here's how to determine the equilibrium moisture content of corn starch stored in an atmosphere of 60% relative humidity at (122°F) 50°C. Connect with a straight edge 50 on the temperature scale with 60 on the relative humidity scale. This cuts moisture content scale at 14, thus the moisture content is 14 percent.

Placing a straight edge on the moisture content—W. B. scale at 12%, and the temperature scale at 20°C (68°F) and projecting this line to the intersection of the relative humidity scale, relative humidity of 20% is obtained. By the same process, using the 60°C (140°F) temperature point and 12% moisture point, the corresponding relative humidity is 70%. Therefore, the moisture content of starch stored in temperatures from 20 C (68°F) to 60°C (140°F) can be



maintained at 12% as long as the relative humidity is maintained at a corresponding point between 20% and 70% respectively.

We hope that this data will prove helpful to you and offer our complete technical counselling services to assist you with any corn starch related problem. Write, wire or phone for prompt attention to your inquiry.

HUBINGER PRODUCTS FOR THE TEXTILE INDUSTRY

OK—Pearl Starch
OK—Hubfilm
OK—Hubchlor
OK—Waxyfilm
OK—Printex

By the use of the nomograph, storage conditions of range of temperature and of relative humidity can be predetermined to maintain moisture content as a standard of 10 to 12% (as is).

* ONE OF A SERIES OF ARTICLES, FOR THE COMPLETE SET AND FOR OUR CONTINUING TECHNICAL DATA SERVICE, WRITE WITHOUT OBLIGATION TO:

The Hubinger Company
KEOKUK, IOWA

NEW LITERATURE Continued

Available from Pressed Steel Div., Republic Steel Corp. (F-43)

Removable roller conveyor—Described in 14-p. brochure from Rapids-Standard Co., Inc. (F-44)

Steel shelving — Bulletin presenting the Penco line of phosphatized steel shelving is available from Penco Metal Products Div., Alan Wood Steel Co. (F-45)

Platform truck — Specifications and general information on 4,000-lb. platform truck available from Hyster Co. (F-46)

"Controlled-Overhead Plan" — Is the title of a booklet available from Manpower, Inc. (F-47)

Industrial first aid—Units described in Bulletin 333 from Davis Emergency Equipment Co. (F-48)

Mechanized materials handling—Featured in magazine available from Lewis-Shepard Products, Inc. (F-49)

Better shipping methods—And shipping-room supplies described in catalog from Diagraph-Bradley Industries, Inc. (F-50)

Textile World

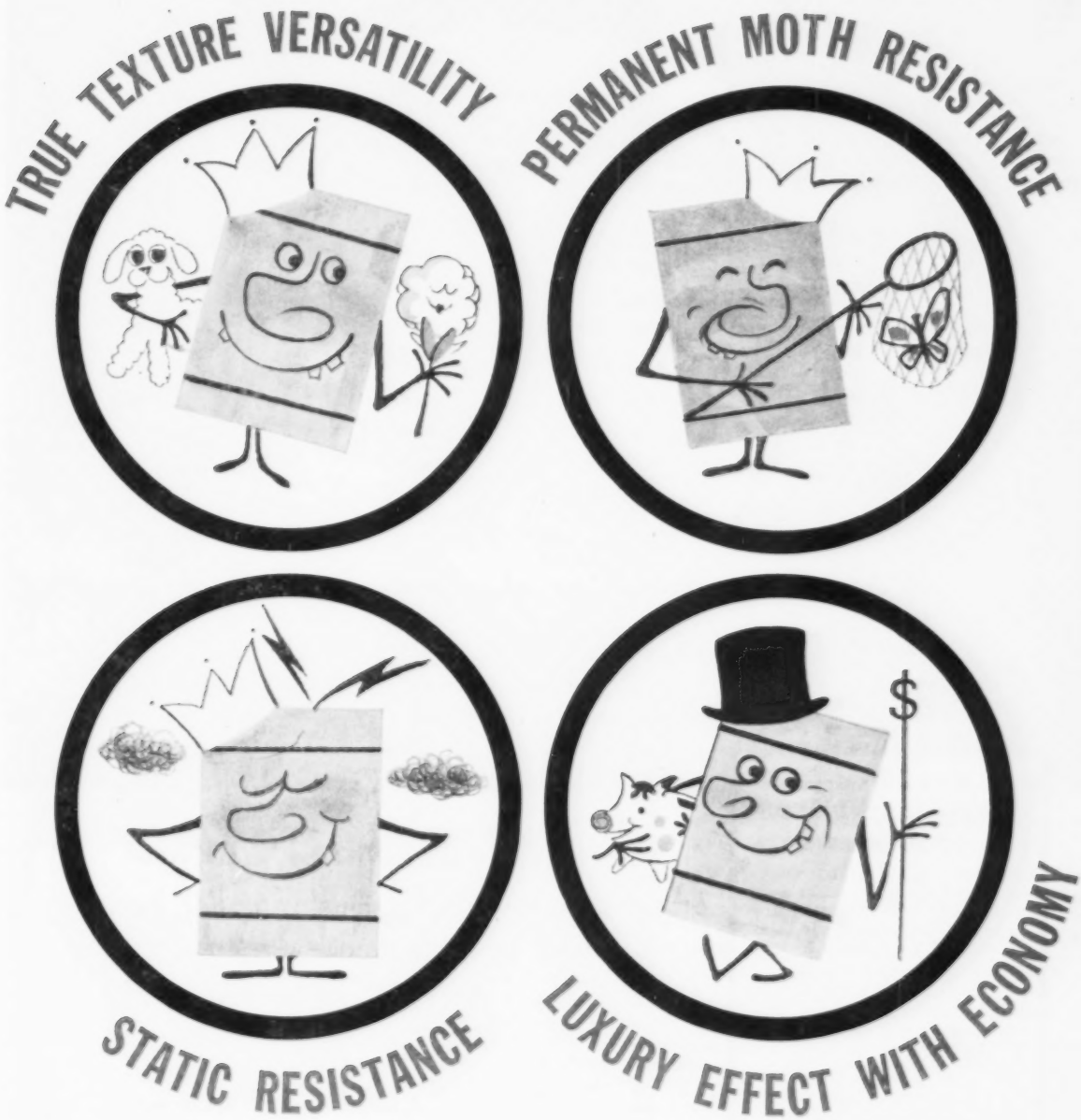
BOOK REVIEWS

GUIDE TO THE LITERATURE OF CHEMISTRY, by E. J. Crane, Austin M. Patterson, and Eleanor B. Marr; John Wiley & Sons, Inc., 440 4th Ave., New York 16, N. Y.; 397 pages, $9.50.

In this volume, the books, periodicals, patents, government publications, technical bulletins, and catalogs that contain chemical information are listed.

There are appendixes of literature relating to chemical literature and symbols, abbreviations, and standards used in chemical literature. Libraries are listed, as are periodicals and organizations identified with chemical work.

Finally, the volume tells the chemist how to search the literature profitably. This second edition of the work has been expanded and brought up to date.



ALL YOURS WITH ENKA RAYON STAPLE

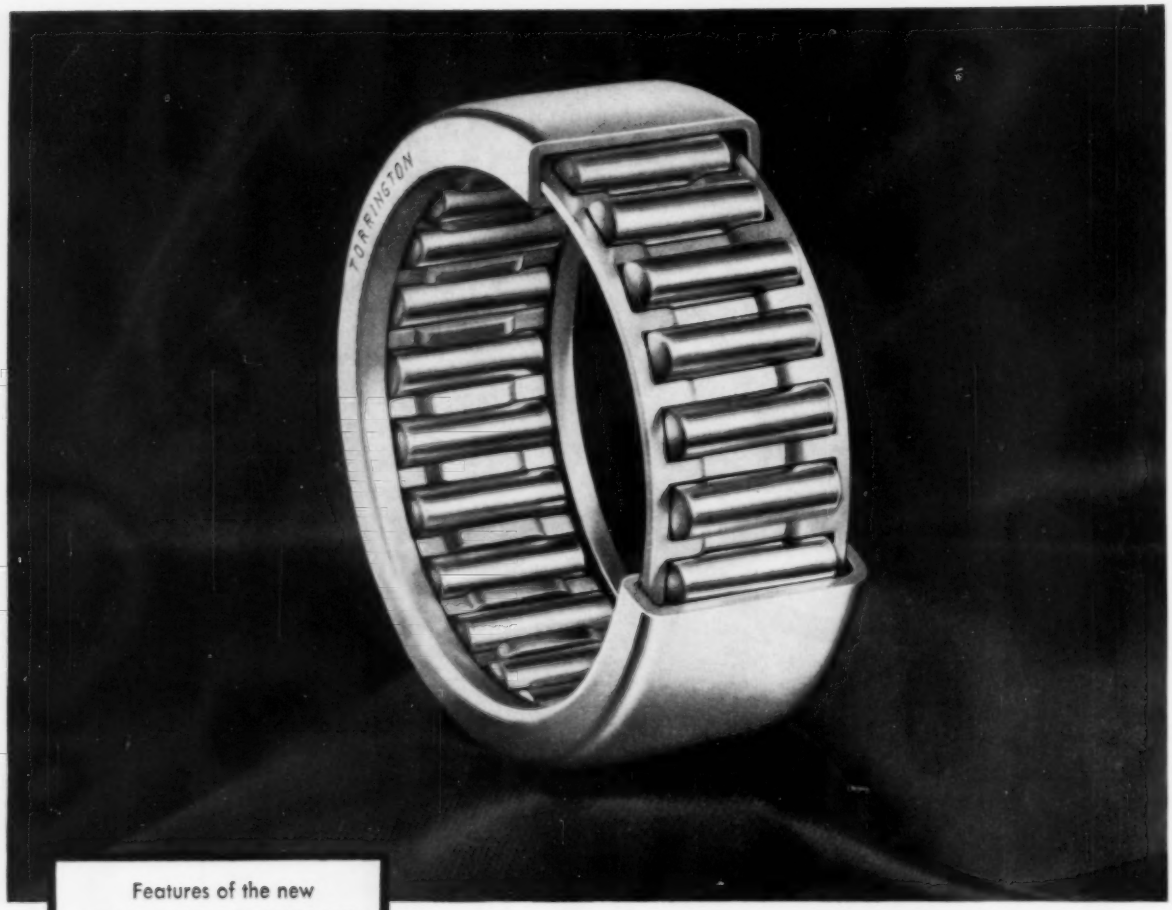
Enka's most modern plant and equipment offers you precision-produced staple for plus performance.

AMERICAN ENKA CORPORATION

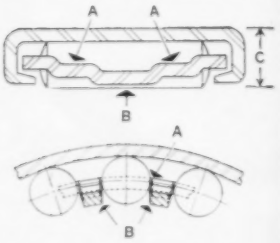
PRODUCERS OF JETSPUN® SOLUTION-DYED RAYON • SKYLOFT LOFTED FILAMENT RAYON • FILAMENT AND STAPLE RAYON • FILAMENT AND STAPLE NYLON

530 Fifth Avenue, New York 36, N. Y. • 871 McCallie Avenue, Chattanooga, Tenn. • 428 Jefferson Standard Bldg., Greensboro, N. C. • 2001 Industrial Bank Bldg., Providence, R. I

For more data, write this page number on Reader-Service card. →



Features of the new
TORRINGTON DRAWN CUP ROLLER BEARING



- rollers end-guided at pitch line (A)
- shaft-riding retainer (B) designed to permit lubricant circulation
- high capacity in small cross section (C)
- long pregreased life
- efficient at high speeds
- mounted by press fit
- simple housing design
- low unit cost

INTRODUCING

a new low-cost precision roller bearing...

THE TORRINGTON DRAWN CUP ROLLER BEARING

For the first time, the advantages of drawn cup outer race construction are available in a precision roller bearing.

This compact, lightweight bearing consists of spherical end needle rollers, a one-piece hardened steel retainer and case-hardened thin-section outer race. Designed to run on a hardened shaft or with an inner race, this new series takes a press fit in a simple housing without snap-rings or shoulders.

Highly efficient roller guidance and lubrication are outstanding features. The shaft-riding retainer contacts the roller ends at the pitch line where guidance can be obtained with the least effort. The design provides ample storage for lubricant and promotes its circulation.

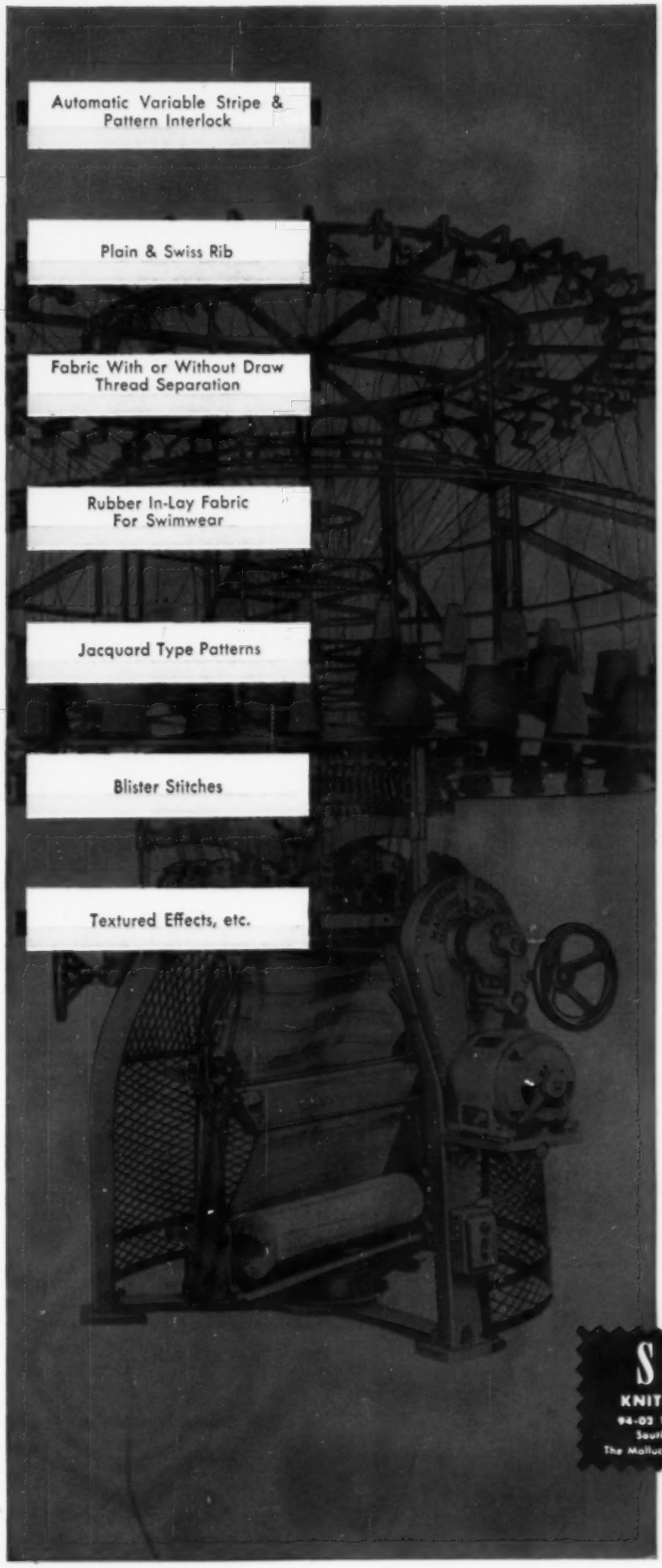
These features make the new bearing particularly suited to applications requiring compactness with precision, high-speed endurance or long pregreased life.

For information on sizes now available and for application assistance, call on our Engineering Department or write for the new bulletin, "Torrington Drawn Cup Roller Bearings." THE TORRINGTON COMPANY, Torrington, Conn. – and South Bend, Ind.

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • THRUST • BALL • NEEDLE ROLLERS


Automatic Variable Stripe & Pattern Interlock
Plain & Swiss Rib
Fabric With or Without Draw Thread Separation
Rubber In-Lay Fabric For Swimwear
Jacquard Type Patterns
Blister Stitches
Textured Effects, etc.

Now Knit A Complete Line Of Interlock-Rib Fabrics With One Machine– SUPREME Model SAI-PP

In versatility and output, this new Supreme model is practically a one-machine knitting mill. With it, you can produce a tremendous range of rib and interlock fabrics. You can switch from one to another quickly and simply to meet changing market opportunities.

Years of Supreme research and engineering development are embodied in this machine... *the first multiple-feed, fancy rib and interlock striper with a stationary bobbinrack and dogless construction.*

- Dual raceway in dial makes possible the production of a tremendous variety of interlock and patterned fabrics with a "birdseye back".
- **Standard 30" diameter model, contains 24 cylinder feeds including 12 individually and automatically controlled four-color striping boxes, 24 three-position pattern wheels and 24 automatically controlled cylinder cams for knit, tuck and welt positions. Knit, tuck and welt positions also available on all dial feeds.**

For more details send for this new bulletin or contact Supreme for a demonstration.

EXPANDING PRODUCTION
ACCELERATING DELIVERY

SUPREME
KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
The Malluck Co., 914 East 4th Street, Charlotte, N. C.

SX-189

CONTINUED FROM PAGE 107

develop from the indices, however, without regard to the particular conditions or to his lack of control.

4. The impression may be based on a dramatic but nontypical instance of success or failure.

It is necessary for the superior to ask in such instance, "Is this really the way this man operates?" And it is particularly necessary to examine failures in the light of earlier impressions of the man. Failures incurred by a "fair-haired boy" who is viewed favorably by higher management are likely to be written off as evidences of growing pains. The same errors by someone else can inspire the quick impression that he is unsuitable.

5. The impression may be an erroneous interpretation of the observation.

Extremely skilled and gifted persons often perform their assignments with such little obvious effort and fuss that the observer gets the impression the job is merely routine and that no special merit attaches to the man's accomplishments in it.

6. The impression may be completely superficial and based on factors not really connected with the man's job performance or his capabilities.

Appearance is one of the main bases for such impressions. It is distressingly common to hear this evaluation of a man: "He may have what it takes to be a foreman, but he just doesn't look the part."

7. The impression may be unduly influenced by someone else's impression.

The foreman may give way to the invalid opinion of his own superior to avoid making an issue of the matter or through the erroneous assumption that his superior "sees something in the man I can't see." When a foreman encounters an opposed impression he should ask himself, as a basis for agreeing or disagreeing, whose impressions are based on the closer and more-comprehensive observations.

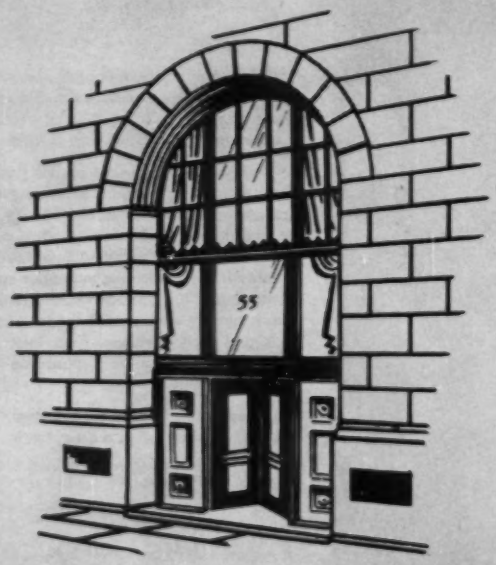
8. The impression may be a denial of clear evidence of suitability or nonsuitability.

This situation is most likely to occur when a first impression is strong. That impression tends to persist despite the development of contrary factual evidence.

There are other sources of errors of impression, but this list should help a supervisor check out his own opinions and the opinions of others in regard to employees he is considering for promotion.

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



Textile Banking Company

55 Madison Avenue, New York 10, N.Y.

Providing operational financing for the apparel, electronics, furniture, leather, plastics and textile industries.

Subsidiaries:

T. B. C. Associates, Inc., New York Southwest Texbanc, Inc., St. Louis

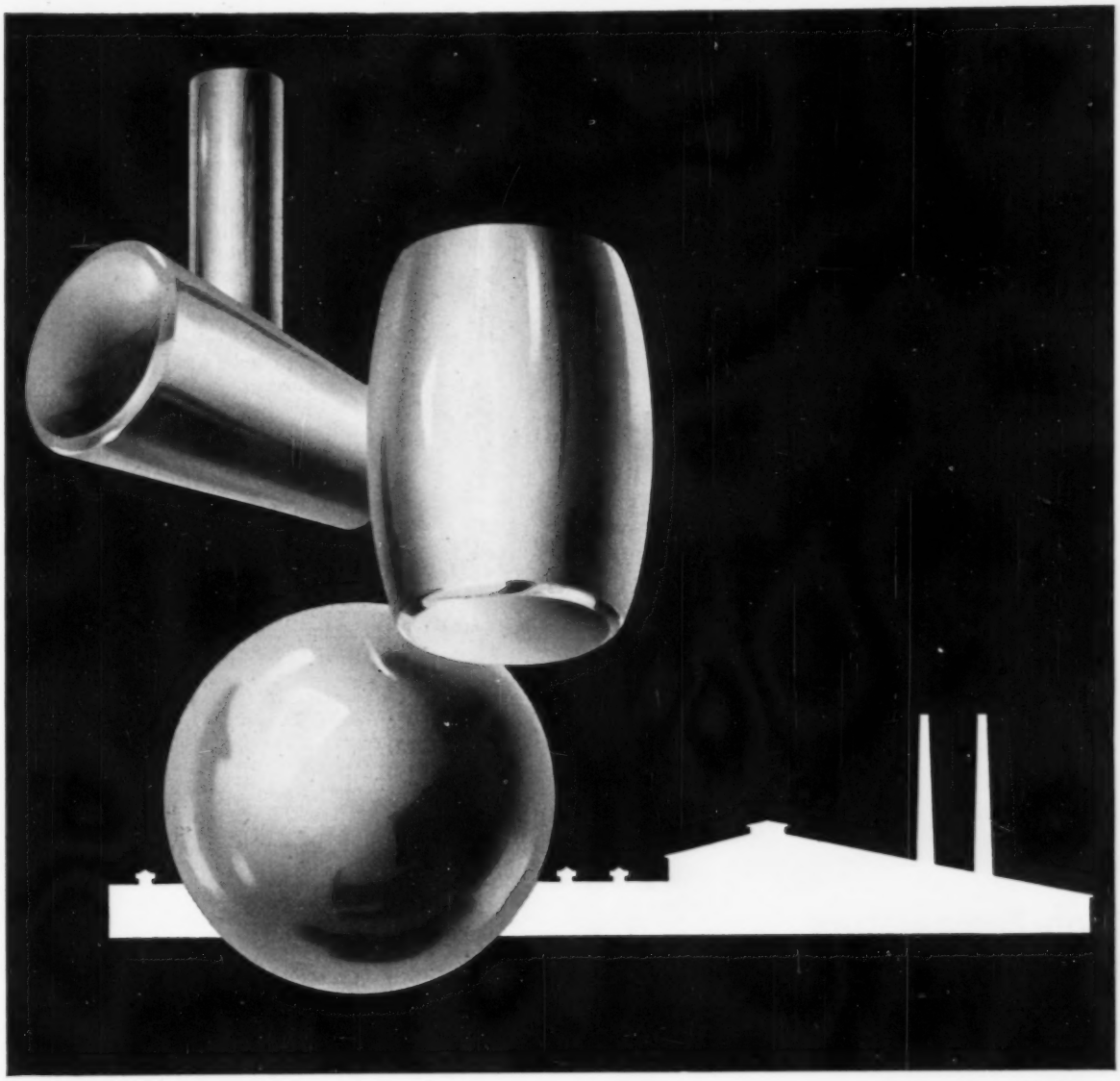
NEWS ABOUT MILLS

CONTINUED FROM PAGE 13

United Piece Dye Works, North Charleston, S. C., has temporarily discontinued printing operations. Other operations of the company will not be affected by the move.

CONTINUED ON PAGE 150

← For more data, write this page number on Reader-Service card.



the multi-purpose grease with "special" performance

Here is one multi-purpose grease that actually performs better than a great many "special purpose" greases for all types and sizes of bearings – even under extreme *pressure*, *temperature* and *moisture* conditions.

Nebula EP retains its outstanding lubricating properties at temperatures above the limits of a number of special heat-resistant greases. But unlike many high-temperature greases, Nebula EP possesses high anti-wear and load-carrying qualities – comparable to those of most specialized extreme-pressure greases. Nebula EP's *constant consistency-temperature characteristics are among its most outstanding features.* Another important Nebula EP advantage: excellent oxidation stability, assuring long service and storage life.

Now available in three grades, Nebula EP is well suited to *all* types and sizes of bearings . . . can be applied by hand packing, grease cup or gun, or through a centralized system. For complete technical information, contact the nearest Esso Standard Oil Company Division Office: Boston; Pelham, N. Y.; Elizabeth, N. J.; Bala-Cynwyd, Pa.; Baltimore; Richmond; Charlotte; Columbia, S. C.; Memphis; New Orleans.

NEBULA® EP Esso

ESSO RESEARCH works wonders with oil

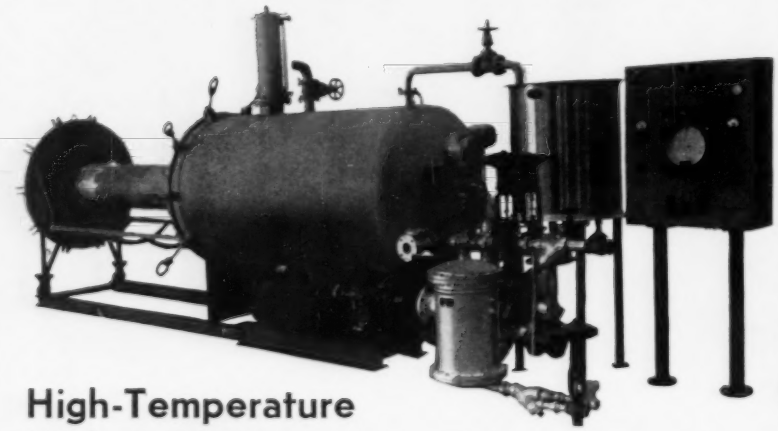
For more data, write this page number on Reader-Service card. →

CONTINUED FROM PAGE 148

Woodside Mills, Greenville, S. C., has started an expansion program at its Easley plant. Scheduled for completion about July 1, the program will cost about $100,000. A new addition will be built consisting of 3,500 sq. ft., and 56 44-in. X-2 looms will be installed there. Included in the expansion program will be a new air-change system and a new elevator tower.

Wunda Weve Carpet Co., Greenville, S. C., has introduced its tenth complete line of woven cotton carpet. The newest line of cotton broadloom, Wunda Rama Tweed, will retail for $9.95.

NEW GASTON COUNTY FABRIC DYEING MACHINE



High-Temperature High-Pressure

This machine is designed to dye open-width woven fabrics made of synthetic fibers and blends of natural and synthetic fibers that require high temperature-high pressure procedures for good dyeing results. Certain synthetic fabrics are HEAT SET during dyeing thus eliminating an additional process for this purpose.

Machine can be supplied with one-way or two-way flow according to customer specifications.

Machine capacity is for cloth up to 120" wide and up to 2,500 yards in length.

OUTSTANDING NEW FEATURES

AUTOMATIC HEATING AND COOLING—The exchanger is equipped with automatic steam and water valves so that the temperature controller maintains temperature setting at all times.

STATIC PRESSURE CHAMBER—Compressed air is injected into dyeing vessel to provide a static pressure cushion which allows the dye pump to maintain a constant flow.

RUNNING WASH SYSTEM—Clean water is fed to the dye pump from the expansion tank through large pipe line. The wash water is forced thru the dye beam and exhausted to drain sewer.

COMPLETELY AUTOMATIC FLOW CONTROL—Desired dyeing pressure is pre-set on control panel, pump is started and pressure is then maintained at set point throughout the entire dyeing cycle. Flow control valve is always closed when dye pump is not running and it is also closed during reversal periods. The valve closes slowly before the flow is reversed from 'outside-in' to 'inside-out' or vice versa, by the 4-way reversing valve. After the flow is reversed the flow control valve opens slowly. This eliminates surges which disturb the position of the cloth on the dye beam.

AUTOMATIC BEAM REVOLVING DEVICE—The dye beam is revolved by a constant speed driving mechanism and this assures even penetration during the scouring and dyeing cycles. This feature minimizes shading and produces level dyeing from end to end of the dye beam.

GASTON COUNTY DYEING MACHINE CO.

Pioneers In Automatically Controlled Dyeing Machinery

STANLEY, N. C.

Gaston County Dyeing Machine Co., Terminal Bldg., 58 Hudson St., Hoboken, N. J., G. Lindner, Mgr. — A. R. Breen, 80 E. Jackson Blvd., Chicago, Ill. — Albert P. March, Whitemarsh, Pa., Philadelphia, Adams 3-2901 — The Rudel Machinery Co., Ltd., 614 St. James St. W., Montreal, 260 Fleet St. E., Toronto

CONTINUED FROM PAGE 77

The solution-dyed yarn is received at the mill in 10-in.-dia. packages of single-ply yarn that weighs 6.9 lbs.

Single yarn is twisted to three-ply yarn with 1.35 tpi. Doffed bobbins weigh a fraction over 3 lbs., and doffing time is 38 mins. All pieced ends are joined with a latex compound to eliminate knots for tufting.

Spools of ply yarn are taken from the twisters to winders where they are wound to larger packages for the tufting machines. Yarn is wound in lots of 9,000 lbs.

For the first 6,000 lbs. of stock, two complete bobbins are wound to a single cone, which weighs 6 lbs.; the last 3,000 lbs. of the stock is wound only one bobbin to a cone. Doffing time for a 6-lb. cone is 5 mins.

Tufting Machine Output Is High

The mill has 15 tufting machines 12 and 15 ft. wide in $\frac{1}{8}$-, $\frac{5}{32}$-, and $\frac{3}{32}$-in. gauge. All machines run at 550 courses per minute, and each machine produces 600 yds. of carpet per 8-hr. shift. Other machines 30 ins. wide are used for fabric development. Solution-dyed yarns are all run on $\frac{1}{8}$- and $\frac{5}{32}$-in.-gauge machines.

All 15 wide machines are in a single room with 50,000 sq. ft. of floor area. Machines are spaced in alleys facing each other, just as looms are spaced in a weave room. Creels are at the backs of the machines and are two decks high with a walkway at the top decks.

Creels Hold 1,600 Ends of Yarn

Tubing for the creel ends is copper. Two yarn cones are joined at each cone holder for pigtail creeling. Ends are spliced with a latex compound to prevent knots. The number of ends per creel varies by the carpet width and gauge; a $\frac{1}{8}$-in.-gauge machine tufting a carpet 15 ft. wide has 1,600 ends.

Carpets are inspected as they are tufted, and tufts are replaced with a hand machine at end breaks.

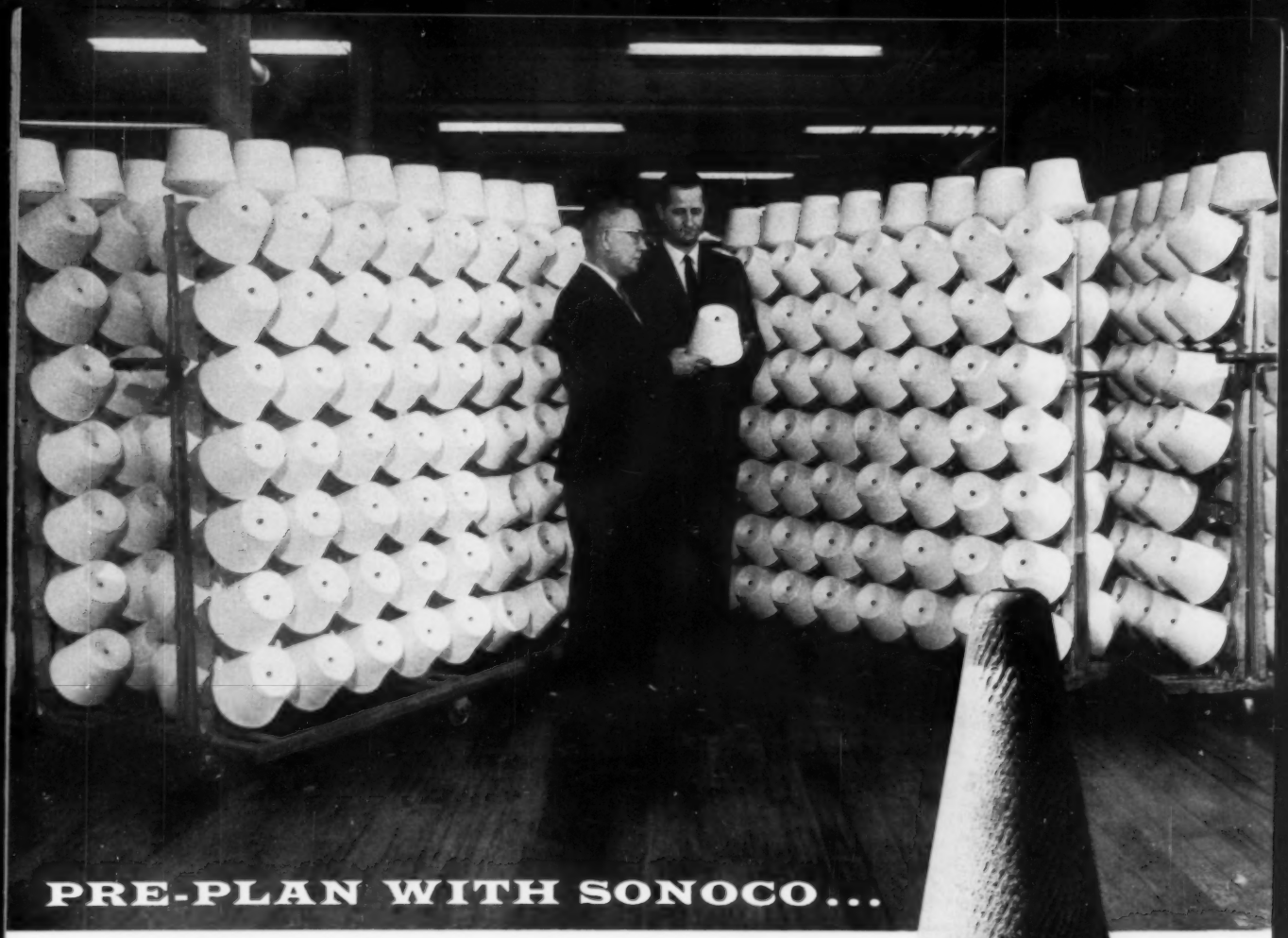
Jute is used for all carpet backing except on cotton carpets; duck is used for cotton carpets. Jute is bought, but duck is woven in an adjoining weave room.

Skrim fabric used for leading carpets through the finishing machines and for some cotton-carpet backings is woven at the mill. All these cotton fabrics are woven double at the looms in 9-, 12-, and 15-ft. widths.

Carpets are doffed at the tufting machines in rolls that contain three to four cuts of 35 linear yards each.

CONTINUED ON PAGE 152

← For more data, write this page number on Reader-Service card.



PRE-PLAN WITH SONOCO...

FOR A PERFECT PACKAGE!!

When you pre-plan with SONOCO, you get a yarn carrier best suited to your particular operation.

Typical of SONOCO specialization is the widely-accepted *Nutaper* cone with Velvet surface for winding cotton yarns. This cone provides a perfect foundation for a firm, uniform package that will deliver smoothly and evenly to the *last turn* under high speed conditions. Even with fine count yarns, the Velvet surface prevents slippage, thereby allowing a more perfect package to be built.

From SONOCO'S variety of cone surfaces you can find one to fulfill your requirements. Smooth, rough, Velvet or Unitex surfaces are available — each one developed thru extensive research and each proven in actual mill production.

Pre-plan with SONOCO for better performance. For a perfect carrier . . . call SONOCO!

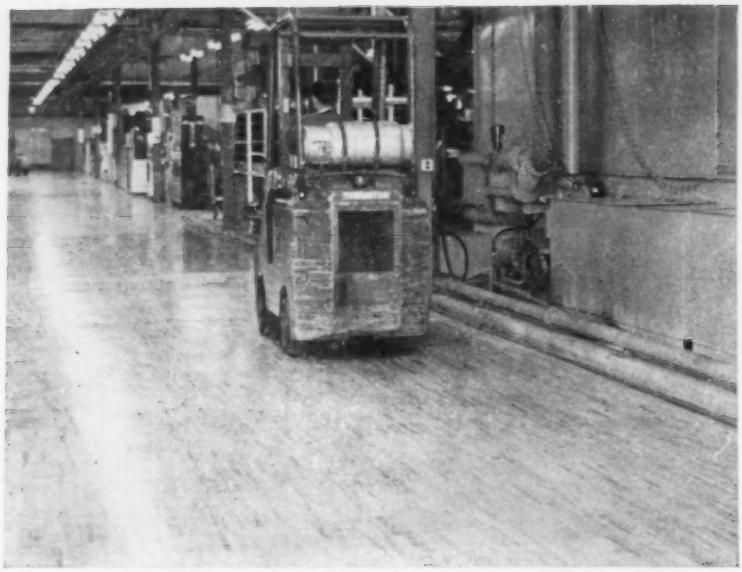
SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office— HARTSVILLE, S. C. • MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J. • LONGVIEW, TEXAS • PHILADELPHIA, PA. • LA PUENTE, CAL. • ATLANTA, GA. • GRANBY, QUEBEC • BRANTFORD, ONTARIO • MEXICO, D. F.

1462



HEAVY-TRAFFIC AISLE sealed with Tennant No. 15 stays bright and durable.

NEW! **TENNANT No. 15 Heavy-Duty Floor Seal... has TWICE the life of other heavy-duty seals**

With at least twice the life of other top-quality floor seals, TENNANT No. 15 Heavy-Duty Floor Seal is in a class by itself!

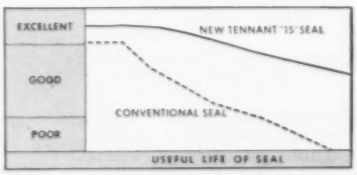
Attractive, easy to use, and built to take punishing traffic, it's the TENNANT SYSTEM's answer to rising textile floor care costs.

Stays bright, durable. Outwears any comparable material we know of at least 2 to 1. Does not darken with age. Resists dirt, abrasion, rubber burns, moisture, etc.

Dries fast; easy to use. Under most conditions you put first coat down at 4 pm; have the third coat traffic-ready by morning. No separate primer needed—it's both a seal and a finish.

Cuts floor care costs. Has no equal for long life; saves many gallons of seal yearly. Easy to clean; saves labor. For use on *both wood and concrete.*

WRITE TODAY *for details on this amazing new Tennant System discovery —and its value to your mill.* G. H. Tennant Company, 737G N. Lilac Drive, Minneapolis 22, Minnesota.



Graph above shows comparative rating based on wear, color, gloss and other vital characteristics. Note sustained performance of Tennant No. 15.

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

TUFTED-CARPET SALES

CONTINUED FROM PAGE 150

Carpets Are Finished at the Mill

In the finishing department of the plant, yarns are stock-dyed and some carpets are piece-dyed; all carpets except carpets of solution-dyed yarns are dyed at the mill by one of these two methods.

Carpets made of solution-dyed yarn are finished by wetting them out in a dyebeck. Wetting out begins with a wash for 30 mins. at 160° F. Then the machine is stopped for 10 mins. Finally they are rinsed for 30 mins. at 120° F. with finishing chemicals. The complete wetting-out cycle is 1 hr. and 10 mins.

Wet-out carpets are vacuum extracted and are passed through an oven dryer, where they are brushed. Carpets make three trips through the oven. Then they are inspected.

Roller Coating Completes Carpets

Then carpets go through a roller-coating machine where a latex backing is applied. The carpets make three trips through a curing oven held at 300° F. Two roller coaters are in operation at the mill, and a third one is being built.

The final operation at the plant is inspection on platforms that hold full-length rolls of carpet. Inspection is for tufting, color, and finishing defects.

On an average day, 10 to 12 different patterns of carpets pass through the inspection department. And each pattern may have as many as 19 color groups.

Inspected carpets are rolled into 35-yd. cuts and are wrapped in burlap and sealed with a ticket that contains all descriptive data on the carpet. Then they are stored in adjoining warehouses.

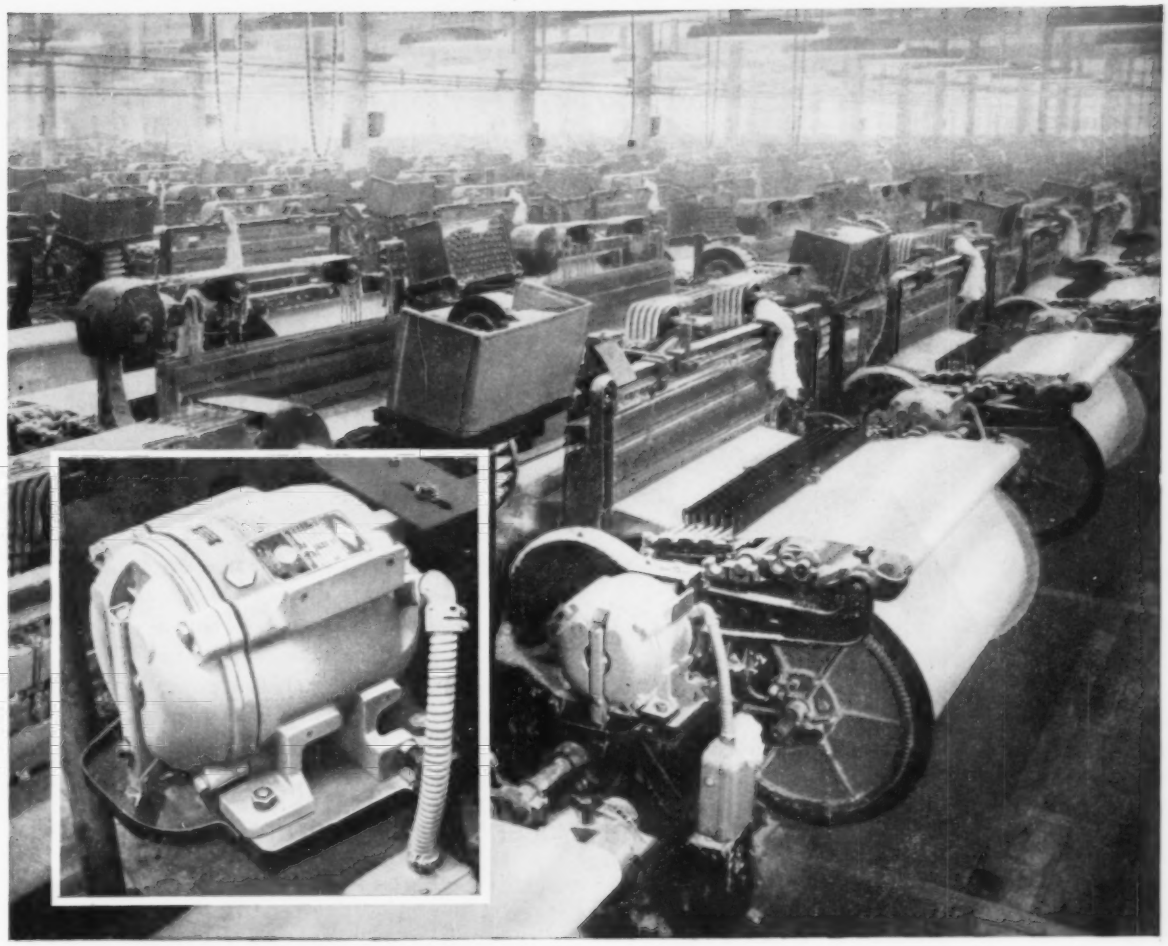
DEIONIZER EFFLUENT

CONTINUED FROM PAGE 82

the anion units was converted to a weakly basic unit.

The entire system was piped so that the plant could operate as a four-bed system or so that the strongly basic unit could be used with either cation unit to form a two-bed system.

The counterflow system of regeneration that was developed for this plant depends on an upflow of regenerating chemicals that is bucked by a downflow of water. By adjusting the rates of flow, expansion of the resin bed



AT CONE MILLS

DIEHL transmitters improve product quality

Three hundred Draper looms powered by the latest type DIEHL Power Transmitters were recently installed as part of an important new modernization program at Cone Mills Corporation's Minneola Plant, Gibsonville, N. C., with most satisfactory results in the improvement of loom performance and product quality.

DIEHL Power Transmitters were developed especially for Draper looms, and feature a fast, positive clutch-brake mechanism combined with an inverted type motor which provides high inertia without need for a separate flywheel. This design produces a constant steady pull for more efficient weaving and better quality greige goods, in the opinion of a plant official. "Increased efficiency of looms will be joined by lower operating costs because of the combination of Draper X2 looms and DIEHL Transmitters," he said. The looms now run at 186 picks per minute.

Cone Mills plant officials are favorably impressed with the positive action of the clutch-brake mechanism, the pinion driving shaft construction which eliminates the thrust bearing on the loom, the speed and ease of removal and replacement of the transmitter for inspection and servicing, the totally enclosed housing design which protects against weave room lint and fly, and the negligible maintenance and down-time costs.

DIEHL Power Transmitters can increase production and efficiency—at lower operating costs and less down-time—in your mill. Specify them for your looms.

Diehl

DIEHL MANUFACTURING COMPANY
Electrical Division of
THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, N. J.

☐ Please send me Consolidated Motor Catalog and Price List No. TW-6, 3540

☐ Please send me Textile Motor Bulletin No. TW-6, 3526

NAME _____

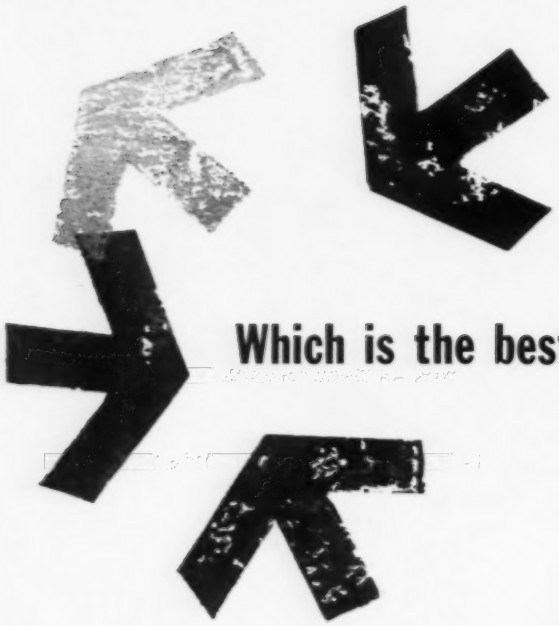
COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

Baltimore • Chamblee, Ga. • Charlotte • Chicago • Cincinnati • Los Angeles • Milwaukee • Needham, Mass. • New York • Philadelphia • Syracuse

For more data, write this page number on Reader-Service card. →

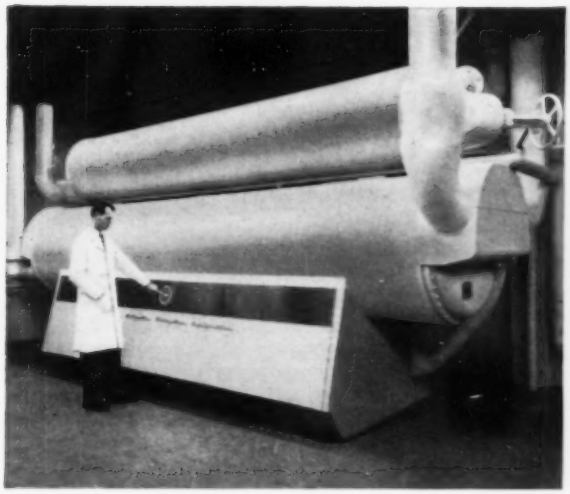


Which is the best way to air condition a mill?

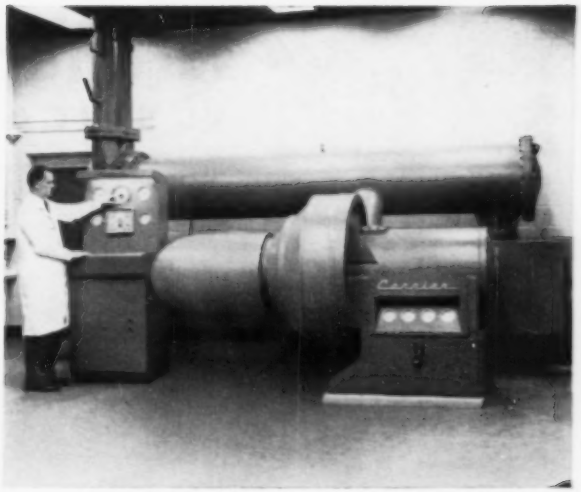
It depends on your mill. Its size, its shape, the fibers you handle, and the processes you use are all important. And if you want control of temperature as well as humidity, which refrigeration is best? Carrier sells many types of air conditioning and refrigeration. For example, one of the four types of refrigeration shown on the opposite page is best for your mill.

Only Carrier makes all four types and is able to give you an impartial recommendation. For complete information, call your nearest Carrier office. Or write Carrier Corporation, Syracuse, New York.

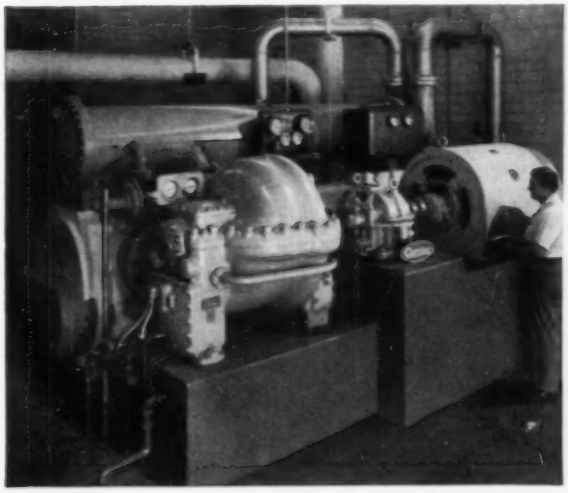
Carrier



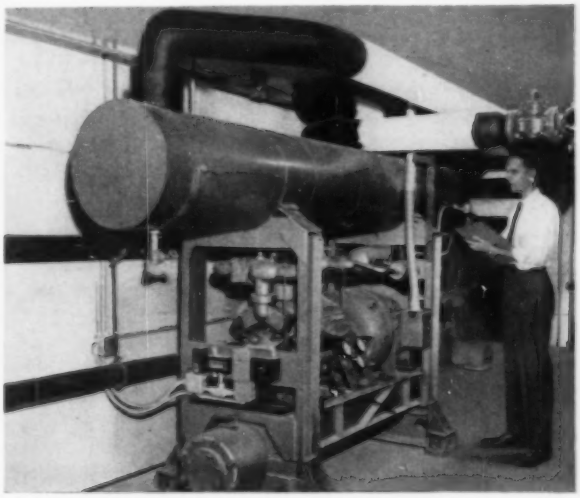
If you have low-cost steam, Carrier's new Absorption Refrigerating Machines may be best for you. They cool water for air conditioning by using heat energy derived from waste heat or hot liquids. If you have fluctuating loads, they will operate automatically from full load to zero capacity 24 hours a day, seven days a week, dependably and efficiently. Carrier's new Absorption Machines are available in capacities from 60 to 700 tons.



If you have low-cost power, the new Carrier Hermetic Centrifugal Refrigerating Machines may be your best answer. They're the only hermetics with such advanced features as a refrigerant-cooled motor, hydraulic-powered capacity vanes, and electronic self-contained controls for completely automatic operation. Their compactness and light weight minimize space and structural requirements. Capacities range from 90 to 1100 tons.

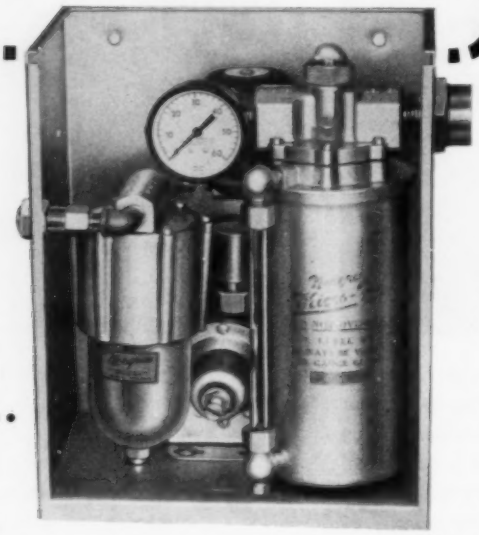


If you have heavy air conditioning requirements, Carrier's famous external drive Centrifugal Refrigerating Machines undoubtedly are best for you. With capacities to 4000 tons, they can provide accurate, automatic control of temperature and humidity in the largest mills. Thousands have been giving dependable service for decades in mills of every size to score top performance records. They are adaptable to many special drives.



If your mill is small or if you have limited air conditioning requirements, Carrier Reciprocating Water Cooling Machines may be ideal for you. They're completely "packaged" with compressor, cooler, condenser and controls co-ordinated in design by Carrier engineers. Installation costs are lower and operating performance is more efficient than units assembled from unrelated components. Available in capacities ranging from 3 to 200 tons.

Norgren® MICRO-FOG® LUBRICATION

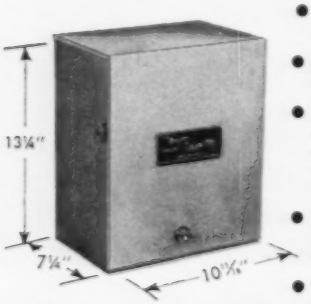


NEW for textile machines...

Compact, Tamper-Proof Cabinet Units

lubricate all bearings, gears, chains and cams on a machine

These new Norgren units provide ideal lubrication by applying just the right amount of air-borne oil fog to all bearing surfaces. The standard unit includes an automatic-drain air line filter, a solenoid valve, a pressure regulator, a pressure switch and a MICRO-FOG Lubricator... *and provides the following important advantages:*



1 QT. OR 2 QT. OIL CAPACITY
200 OR 300 BEARING INCH RATING

- **TAMPER-PROOF**—Totally enclosed key-locked cabinet prevents tampering.
- **SPLASH-PROOF**—Coolant and corrosive liquids cannot reach interior of enclosure.
- **CONVENIENT TO SERVICE**—Removable one-piece top and side panel—secured by key lock—provides easy access for authorized personnel. Visual oil feed is proof of lubrication. Oil level gauge glass provided on lubricator.
- **SAFEGUARDS MACHINE COMPONENTS**—Pressure switch actuates alarm or shuts down machine if air pressure fails.
- **HEATER AND OIL LEVEL CONTROL OPTIONAL**—Thermostatically-controlled Heater, for 1 Qt. units, maintains lubricant temperature and viscosity. Oil level control actuates alarm or stops machine when oil needs replenishing.

For complete information, call your nearby Norgren Representative listed in your telephone directory—or WRITE FACTORY FOR NEW No. 900 CATALOG

C. A. NORGREN CO.
If it's Norgren... It's Dependable.

3404 SOUTH ELATI STREET ENGLEWOOD, COLORADO

can be controlled so that channeling and incomplete regeneration are minimized. The spent acid and water are led off just above the bed of ion-exchange resins.

Sodium-Ion Leakage Checked

The advantages of introducing the acid at the bottom of the cation exchanger include getting to the sodium-ion-bearing areas first with the freshest acid. The monovalent sodium ions are not as tightly bonded to the cation-exchange resins as are the divalent calcium and magnesium ions; so the sodium ions tend to be pushed ahead or down through the cation-exchange bed when it is in operation.

Sodium ions predominate in cation leakage from cation-exchange resin beds for this reason. The retained sodium ions are found mostly in the lower areas of the cation exchange bed. Their amounts will vary with the water supply, but their location in the bed will be the same relative to the areas where Ca and Mg ions have been retained.

Reaching these sodium ions first by employing counterflow regeneration cuts down sodium-ion leakage when the bed is in use because regeneration is more complete.

The conductivity of effluent from ion-exchange beds regenerated by the counterflow principle is illustrated in Fig. 2 and compared to conductivity of effluent from conventional regeneration methods. Fig. 3 shows that better performance with considerably less acid has been achieved by using the counterflow principle of regeneration.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 134

Wound-Rotor Electric Motors

Two wound-rotor motors featuring size reduction up to half the size and weight of previous models have been announced by General Electric Co., Schenectady 5, N. Y. Tri-Clad 55 motors are available from 5 through 150 hp.

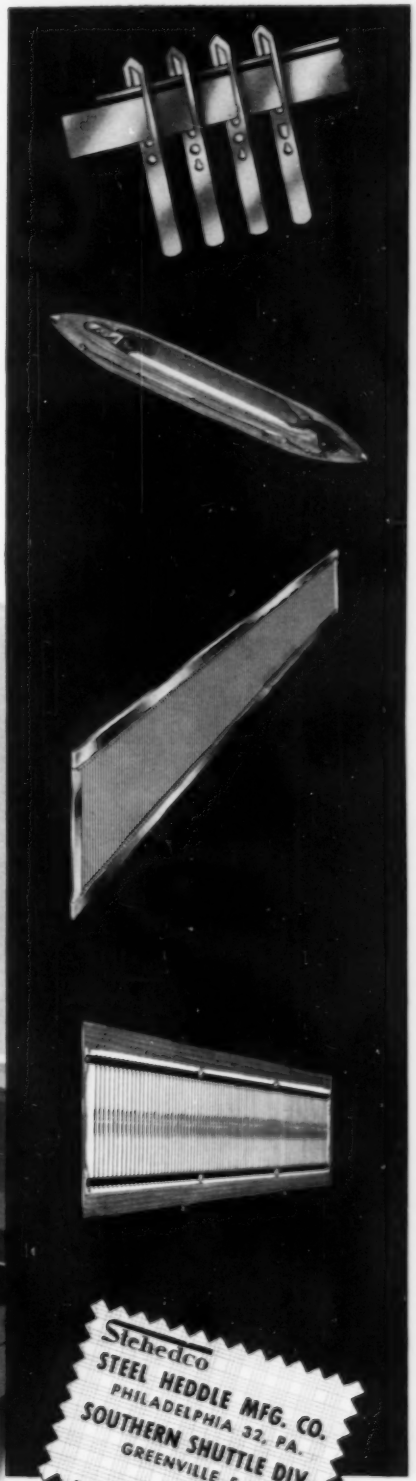
Type MR motors are available in either totally enclosed nonventilated or dripproof enclosures and are for varying-speed, high-starting, or maximum-torque applications.

Maintenance is minimized and motor life is increased with Class B insulation. Moisture protection is pro-

Stehedco

Products are essential to Quality Fabrics

They can be depended upon to make
your job easier and give longer,
trouble-free service . . . more economically.
The proof of Stehedco Quality
is in the woven cloth.
Ask to have one of our qualified
Sales Engineers show you how to get the most
satisfaction from Stehedco Products.

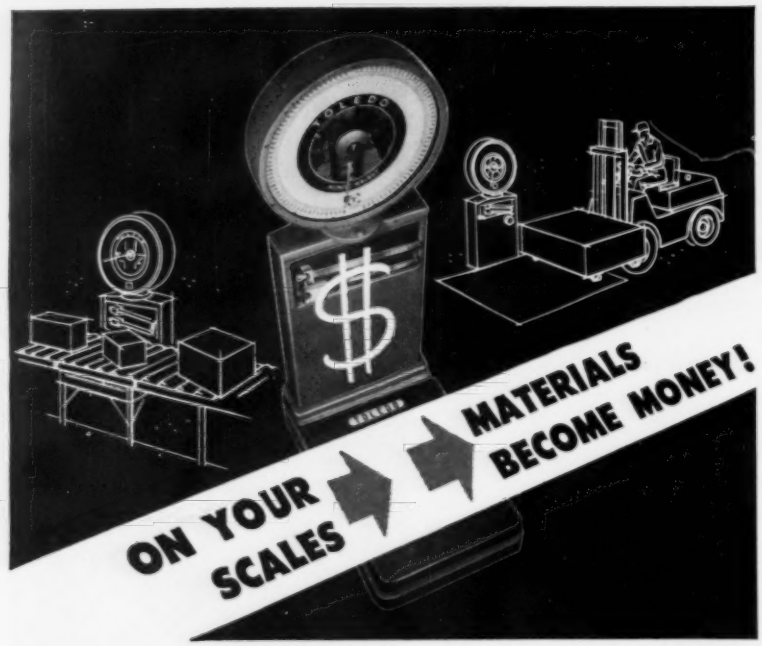


Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

K-5710

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C. •
Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

For more data, write this page number on Reader-Service card. →

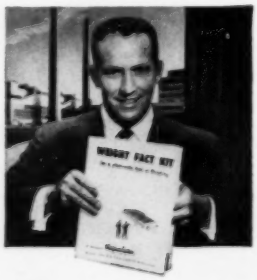


It will pay you to check now

on weighing efficiency in your plant!

For proper cost control, efficient weighing is a prime requirement. Weight records directly affect costs, quality, inventory control and customer billing. You can avoid weighing errors and inadequate weight data by placing the right scales in the right places . . . all properly integrated in a *plant-wide weighing system* to supply basic accounting records on materials received, transferred and shipped.

You can easily check up on the job your scales are now doing. Just ask for the exclusive Toledo Weight Fact Kit. A Toledoman will gladly explain how it will help you detect and correct weighing inefficiencies in your plant. REQUEST YOUR WEIGHT FACT KIT NOW. No obligation. Address Toledo Scale, 1409 Telegraph Rd., Toledo 12, Ohio.



TOLEDO SCALE
DIVISION OF TOLEDO SCALE CORPORATION

Headquarters for Weighing Systems

SERVICE Factory-Trained 200 Cities

PORTABLE SCALE

FLOOR SCALE

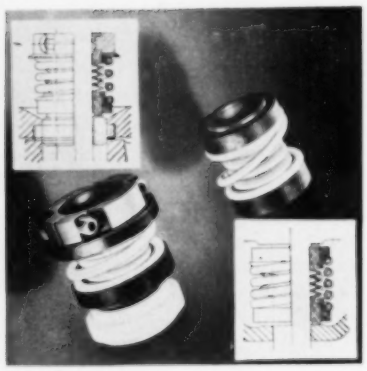
SPEEDWEIGH

COTTON LAP SCALE

vided by glass-insulated wire, impregnated glass roving, and thermosetting varnish applied before the final dip and bake.

The MR motor can be converted from dripproof to a totally enclosed nonventilated motor in the field by adding or removing hand-hole covers and changing pulley end shields. The conversion can be made in motors rating from 7½ to 30 hp.

Circle T-19 on Reader-Service Card

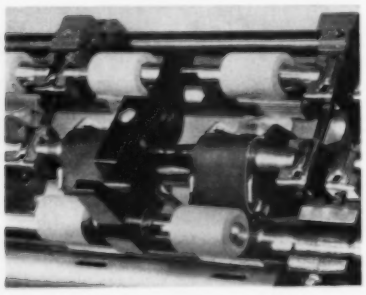


Teflon Bellows Shaft Seal

A bellows-type end-face shaft seal, in which only chemically inert Teflon is exposed to the liquid being sealed, has been announced by Crane Packing Co., 6400 Oakton St., Morton Grove, Ill. It is designed for use where: (1) potent chemicals increase the corrosion rate of seal parts normally made of metal and (2) chemicals prone to crystallization sometimes inhibit the flexibility of a shaft seal.

For internal mounting, a double-ended seal is used. For external mounting, a single-faced seal is used. Sizes are from ¾ to 2 ins.

Circle T-20 on Reader-Service Card



Spinning-Frame Suspension

A simplified ball-bearing top-roll suspension for spinning frames that eliminates cap bars on the front line

When smooth operation is vital

leading mills choose this loop picker

First in the Gates line of 3 outstanding loop pickers is Tex-Hide . . . a product of Gates specialized research.

Tex-Hide is a super-tough, highly resilient material that far outwears any other material used for loop pickers.

Because Tex-Hide provides all the shock absorbing capacity and resilience of natural leather, smoother loom operation over a longer period is assured.

Highest quality in cloth is maintained, downtime costs greatly reduced, for these 2 reasons:

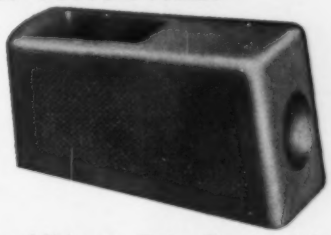
1. Maximum Resilience and Shock-Absorbing Capacity — catches the shuttle without bouncing; thus preventing filling thread from breaking or sluffing off bobbin.

2. Coolness — by running cool, can dissipate more rapidly the heat generated in catching and throwing the shuttle.

For better, faster, more economical production, equip your looms with *all* Gates *specially engineered* accessories . . . available from Gates Textile Distributors.

There's a Gates picker for every loom

Super Vulco Picker



Newest addition to Gates line of pickers. Pale pink color. Excellent for intermediate applications requiring both economy and durability.

Vulco Picker

Molded of rubberized fabric . . . low cost. Designed for use in weaving cottons and specialty-type fabrics where low initial picker cost outweighs all other factors.

Gates Distributors are in the Yellow Pages

The Gates Rubber Company, Denver, Colorado

The Mark of *Specialized* Research

Other Products . . .

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Reversible Pickers

Tex-Hide Harness Straps

Thin-Tex, Vulco, Tex-Hide & Super Tex-Hide Lug Straps

TPA 320

Gates Loop Pickers

Foxboro Humidity Control Systems

There's no guesswork about humidity in this large southern textile mill. A Foxboro Humidity Control System holds it within ±1% of set point, 24 hours a day. And the system provides chart records to prove it!

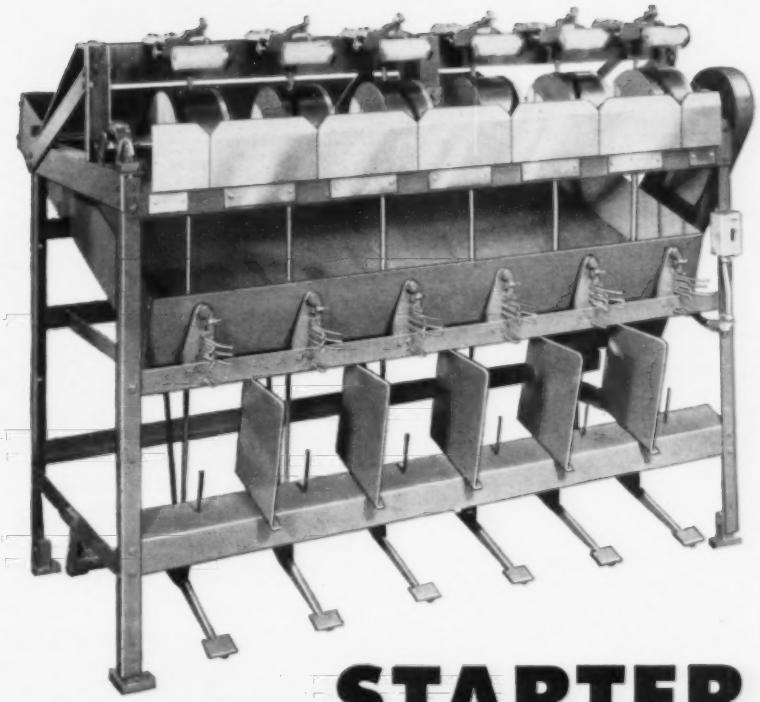
The Foxboro instrument used in the Roving Room pictured above is a Proportional Temperature and Relative Humidity Recorder-Controller. It's just one of a complete line of pneumatic and electric humidity controllers that includes direct-reading dew point instruments, wet and dry bulb instruments, and direct-reading relative humidity recorders and controllers.

There is a Foxboro humidity instrument that will help improve production and product quality in your mill, too. Write for complete details. **The Foxboro Company, 846 Neponset Ave., Foxboro, Mass.**

FOXBORO
REG. U.S. PAT. OFF.

HUMIDITY INSTRUMENTS
Wet & Dry Bulb • Direct Reading Dew Point •
Direct Reading Relative Humidity

← For more data, write this page number on Reader-Service card.



BARBER COLMAN

STARTER MAKER

DESIGNED TO MEET THE NEEDS OF MANY MODERN MILLS

This machine is arranged to wind starter layers of yarn onto a core, from a *cheese* as the supply package. The use of a cheese rather than a bobbin *speeds up* the operation in that *many* "starters" can be made from one supply package; in contrast with the previous method where one bobbin supplied only one, or a limited number, of "starters." Tension fingers positioned above the package allow the proper amount of tension to be introduced.

TAIL FOR MAGAZINING

An additional advantage is that this machine can be used to make a tail of yarn on the "starter," to be used in magazining cheeses. This tail consists of several initial wraps of yarn which are separate and to one side of the main body of the "starter," and subsequently the full cheese. This allows for easy finding of the end, and permits magazining without difficulty. Furthermore, each package will then be stripped completely of yarn, doing away with the necessity of backwinding pieces.

WINDS WOOD CORES

The picture shows wood cores being wound on live spindles, these cores being the kind generally used on twisters, doublers, backwinders, and the like. Adaptors are available for the spindles so that bakelite or dye sleeves can also be wound as "starters" on this machine. The use of a Starter Maker is extremely advantageous for mills dyeing on cheeses, where fresh "starters" are needed every time.

EASILY CONTROLLED, VERSATILE

The operator simply picks up the end from the package, lays it into the tension device, gives it a few wraps around the core, then lets the core down onto the winding drum. When enough yarn is wound on to the core, stepping on the foot pedal lifts the "starter" from the drum and applies a brake. When the end is broken off, part remains held in the tension device, ready for first wraps on the next core. *For complete information, see your Barber-Colman representative, or write direct to the factory.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. | GREENVILLE, S. C., U.S.A. | MANCHESTER, ENGLAND | MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No. 50, Rooms 1201/3 P. O. Box No. 63 Rio de Janeiro, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku, Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

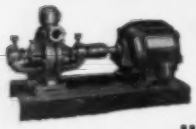
For more data, write this page number on Reader-Service card. →

Superb Performers

AURORA APCO Turbine-Type

AURORA Always PUMPS

AURORA® Centrifugal



for EVERY LIQUIDS HANDLING JOB in INDUSTRY

ASK for CONDENSED CATALOG M-3

The engineer-favor accorded "PUMPS by Aurora" rests squarely upon performance satisfaction. Why not let Aurora precision and quality serve your requirements, too?

AURORA APCO *Turbine-Type* PUMPS

are available in SINGLE STAGE • TWO STAGE • FOUR STAGE • WATER JACKETED • STAINLESS STEEL or SPECIAL METALS for "1001" DUTIES.

AURORA *Centrifugal* PUMPS

are available in SINGLE and TWO STAGE HORIZONTALLY SPLIT CASE • SIDE SUCTION • VERTICAL • NON CLOG • SUMP • MIXED FLOW • SPECIAL DESIGN ETC.

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA PUMP DIVISION

THE NEW YORK AIR BRAKE COMPANY

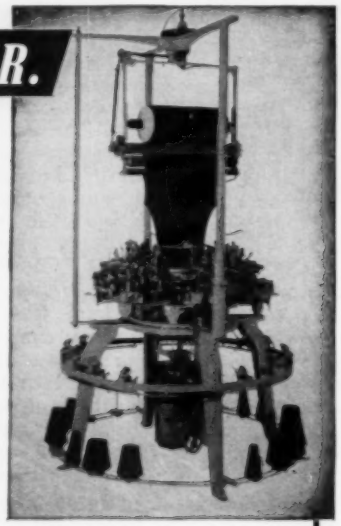
31 LOUCKS STREET • AURORA • ILLINOIS

EXPORT DEPARTMENT — Aurora, Illinois — Cable Address "NYABINT"

ALL NEW...

TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



HERE'S A TYPICAL EXAMPLE...

Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- **MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES**

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.

623 ONEIDA ST. • SYRACUSE 4, N. Y.

Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846

of rolls is announced by Roberts Co., Sanford, N. C. The suspension assembly can be applied to Saco-Lowell Roth and Duo-Roth systems and Whitin long-draft and Super-Draft systems, in addition to the Roberts high-draft system.

Front and back saddles are molded from high-impact phenolic; and when unweighted, they do not separate. Retainers for revolving clearers are provided in the molded parts, which are also smooth and lint resistant.

The top rolls contain double rows of ball bearings, which make the rolls self-aligning with the bottom roll. The twin bearings are grease packed for life and are protected from lint entrance and roll-picker damage by two-piece labyrinth seals. The cots on the new top rolls can be buffed on standard equipment without attachments.

Circle T-21 on Reader-Service Card

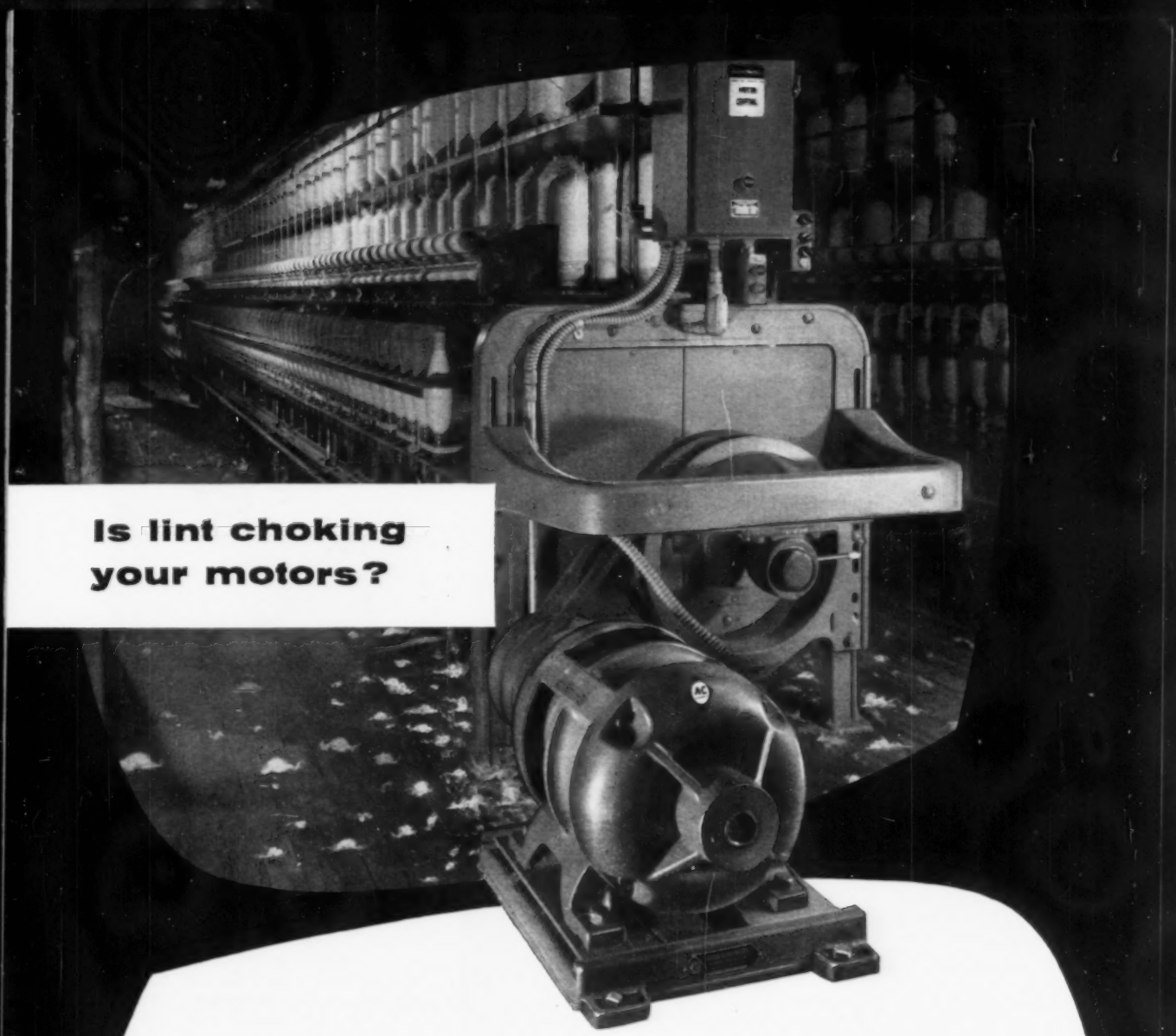
Nylon Bearing Insert

A nylon bearing insert for spinning-frame tension-roll supporting arms has been announced by J. W. Collier Co., Inc., Providence 5, R. I. The insert is easily installed without removing or dismantling the old tension-roll supporting arm by slipping the insert into place over the worn area of the arm's inner bend.

Circle T-22 on Reader-Service Card

Electronic Tensile Tester

The Zwick tensile-testing machine announced by William J. Hacker & Co., Inc., 82 Beaver St., New York 5, N. Y., features electronic load measurement and control of the testing process. The measuring range extends from 50 to 20,000 grams. The load



Is lint choking your motors?

Lint deposits can stop ordinary motors. But you can forget this problem with *Quick-Clean* motors from Allis-Chalmers. These textile motors have built-in protection against lint-laden and humid atmospheres.

The clean, wide-open design and powerful fans keep air (and lint) moving *right through* the motor. This air flow is accelerated by smooth, rounded interior surfaces.

Even the stator coil ends are covered with a compound that smooths out air flow and provides a slick surface where lint can't stick. All of this results in cool, long-run motors.

For more information contact your A-C representative or distributor, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wis. Ask for Bulletin 51B6055C.

Quick-Clean is an Allis-Chalmers trademark.

A-C ALLIS-CHALMERS

ALLIS-CHALMERS

NEMA 50th Anniversary MOTOR & GENERATOR SECTION

A-5710

NASH

. . . With The Famous No. 79

AUTOMATIC QUILL POLISHER

—protects product quality by preventing damage to fabrics and delicate filaments due to rough quills and broken picks. Cleans, buffs, and polishes loom bobbins at speeds up to 40 pieces per minute.

Send for illustrated brochure with complete information.

NASH

J. M. NASH *Company, Inc.*

2364 North 30th Street • Milwaukee 10, Wisconsin

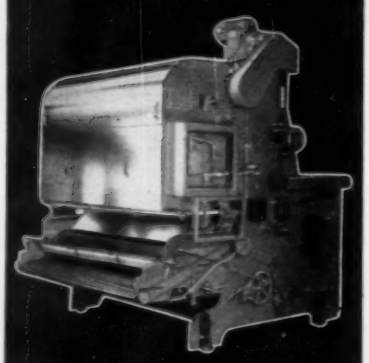
SPECIAL FINISHING MACHINES SINCE 1890

42 sales offices and 15 factories give you fast, dependable corrugated box service. Better see H & D.

HINDE & DAUCH

Division of West Virginia Pulp and Paper Company

Geo.S.HARWOOD & Son



SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

50 LAGRANGE STREET
WORCESTER 8, MASS.

measurement works with little inertia.

Load and elongation are indicated, recorded, and statistically evaluated automatically. Special grips that eliminate pinching have been developed for testing man-made fibers. The machine also provides initial adjustment and measurement of the thread tension.

Circle T-23 on Reader-Service Card

Crimp Tester

Model BM crimp tester offered by Scott Testers, Inc., 95 Blackstone St., Providence, R. I., conforms to the standard ASTM crimp-test method.

To make the test, a loop of yarn used as the test specimen is draped over a fixed top support and hooked to the bottom of a movable vertical shaft. Actuated by the yarn loop, the vertical shaft moves the dial pointer and indicates the percentage of crimp.

The machine weighs 5 lbs. and requires no auxiliary equipment. Provision is made for adding weights to the initial 25-gram weight incorporated in the shaft.

Circle T-24 on Reader-Service Card

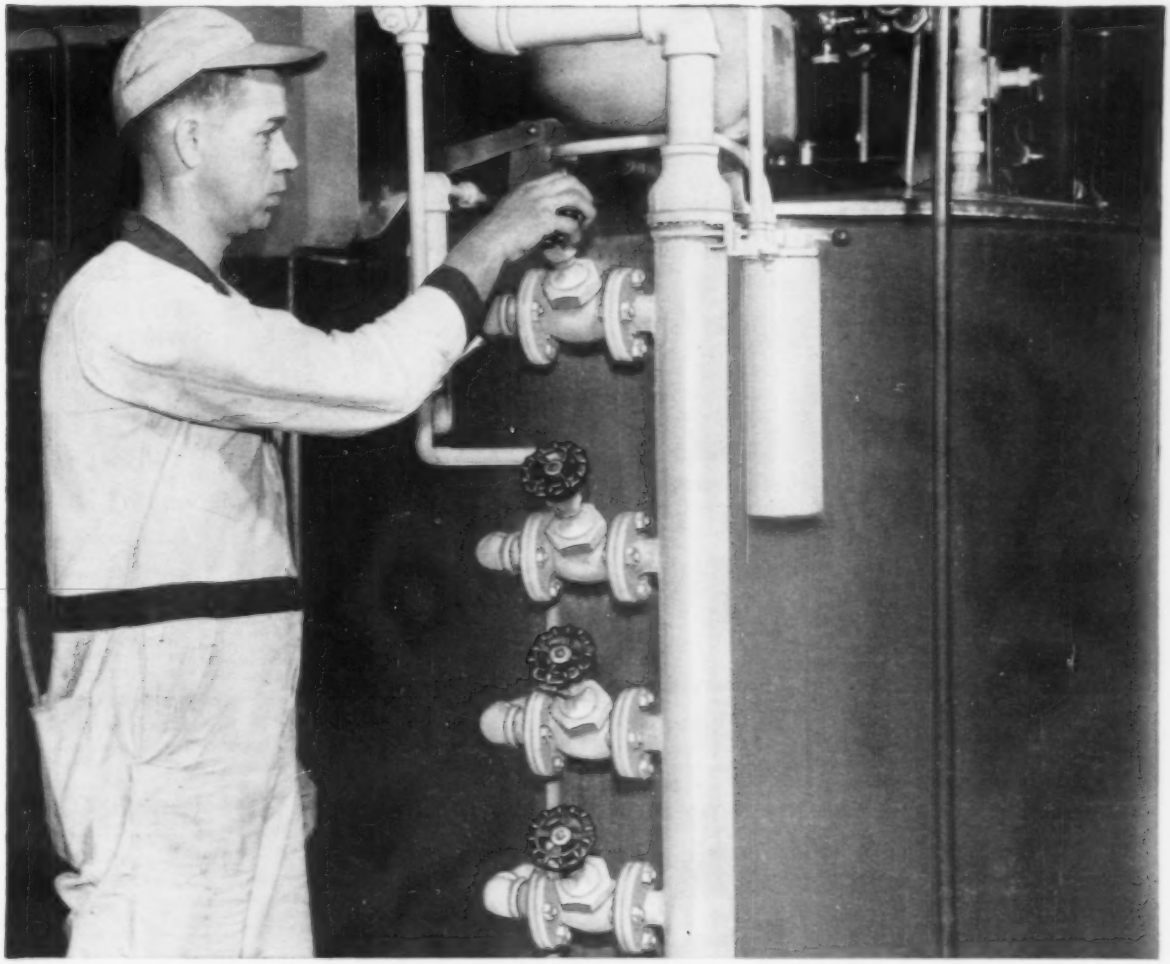
Pocket pH Meter

A small pH meter that is easily portable and carries its own probe unit, buffer, and KCl solutions has been marketed by Analytical Measurements, Inc., 585 Main St., Chatham, N. J. The meter reads full scale, 2 to 12 pH, and is accurate to 0.1 pH. The batteries provide up to 1,300 hrs. of operation. The unit is supplied in a camera-type case for easy handling.

Circle T-25 on Reader-Service Card

CONTINUED ON PAGE 166

How Cincinnati Plant Stops Valve Maintenance Problem



CRANE Valves End Excessive Shutdowns for Repairs

About every four months maintenance men of Sealtest, Central Division, Cincinnati, Ohio, had to replace worn, leaky discs and thread-stripped stems of valves used on the dairy's pasteurizing tanks.

The high cost of down time, labor and parts was only a part of this maintenance problem. Each time the valves had to be repaired, the dairy suffered a drop in production and faced the possible loss of 600 gallons of milk.

Upon recommendation, Crane No. 9 bronze globe valves, with quick-change composition disc, were installed. Today—two and one-half years later—these Crane valves, opened and closed a dozen times a day, have not cost the dairy one cent for repairs, or any loss in production or milk.

Here again is proof that Crane valve economy is never measurable in terms of first cost. You get it in years of maintenance-free service.

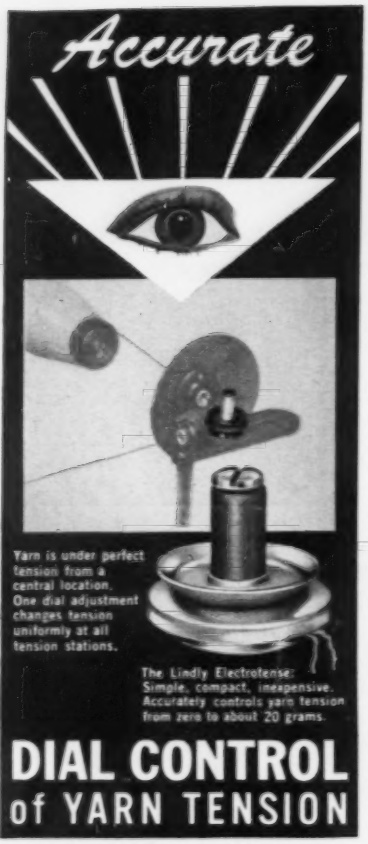
That's why more prudent buyers specify Crane valves for every service.

LEARN WHY Crane bronze valves with composition discs are so economical for service on steam, hot or cold water, oil or gas. Write to address below for Circular AD-2222.

CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas


Accurate
Yarn is under perfect tension from a central location. One dial adjustment changes tension uniformly at all tension stations.
The Lindly Electrotense: Simple, compact, inexpensive. Accurately controls yarn tension from zero to about 20 grams.

DIAL CONTROL of YARN TENSION at Any Number of Stations!

The Lindly ELECTROTENSE is the new, inexpensive, electro-mechanical way to control yarn tension from almost zero to about 20 grams. A turn of a single, centrally located dial applies desired tension evenly and simultaneously at all tension stations.

What are the advantages?

The Lindly ELECTROTENSE permits easy, instant change of yarn tension. It results in more uniform beams, more yarn per warp beam, less maintenance and machine down-time, fewer broken ends and better cloth.

GET THE FULL FACTS ON THIS NEW TIME-SAVING, QUALITY-IMPROVING, COST-CUTTING LINDLY SYSTEM. WRITE, WIRE OR PHONE TODAY!

It Pays to Know LINDLY the Lindly Count

LINDLY & COMPANY, INC.
248 HERRICKS ROAD
MINEOLA, NEW YORK

CONTINUED FROM PAGE 164

Grease-Gun Cartridge

A grease cartridge to fit all standard grease-cartridge guns has been introduced by Lubriplate Div., Fiske Bros. Refining Co., 125 Lockwood St., Newark, N. J. The cartridge is inserted easily and quickly without touching the grease in any way. The cartridge prevents the waste and mess of hand filling, where dirt and lint are often present.

A standard package contains 10 cartridges in a handy carrying carton; grease guns are also available.

The cartridges contain Lubriplate No. 630-2, a high-temperature, extreme-pressure, water-repellent grease-type lubricant that is adaptable for practically all general-purpose lubrication.

Circle T-26 on Reader-Service Card

Battery-Charger Unit

Operator-led electric industrial trucks equipped with battery-and-charger combination units are available from Automatic Transportation Co., 149 W. 87th St., Chicago 20, Ill.

Circle T-27 on Reader-Service Card

Absorption Cooling Unit

Smaller sizes of automatic-absorption refrigerating machines have been announced by Carrier Corp., Syracuse, N. Y. Designed for offices and small stores or plants, the machines are available in 60- to 80-ton capacities. Operation is entirely automatic; refrigeration is generated by steam or hot fluids.

Circle T-28 on Reader-Service Card

Rolling Ladder-Truck

A stock room accessory that combines a short ladder and a receiving truck is offered by Rol-Away Truck Mfg. Co., Inc., 6143 S. E. Foster Rd., Portland, Ore. Access to high shelves in stock rooms is safe and easy with the unit, which when loaded can be rolled to shipping or packing areas.

Circle T-29 on Reader-Service Card

CONTINUED ON PAGE 172

GREATER PROTECTION to your AIR LINE!
M-B
AUTOMATIC WHIRL-A-WAY
AIR LINE FILTER
MODEL W-1
and TRAP
RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.
The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.
M·B PRODUCTS
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN

WE NEED YOUR HELP!

Changing your address?

Subscribing?

Renewing a subscription?

Requesting information?

Then, be sure to send your postal zone number when writing.

And not just to us. Use the zone number in every address that needs it.

To speed the mails, the Post Office has created postal zones in 106 cities.

So, if you live in a city with postal delivery zones, please help us get your mail to you quicker. Always use your zone number when writing.

This Ad Donated in the Interest of Better Postal Service

McGRAW-HILL PUBLISHING COMPANY

330 West 42nd Street
New York 36, New York

ElectroniK Strip Chart Recorder —Single or Multiple Point . . . Records all types of variables.
Recording Wet and Dry Bulb Thermometer Controller . . . Electric or pneumatic control.
Integral Cam Programmer . . . Enables complete 24- or 168-hour program to be precast.
ElectroniK Circular Chart Recorder . . . Has large 28" indicating scale, electric or pneumatic control.
Hair Hygrometer-Thermometer . . . Records humidity and temperature on one chart.
Flow Meter . . . Available with electronic integrator to totalize flow. For accounting and control.
Recording Pressure or Liquid Level Controller . . . Wide choice of control systems.
Indicating Thermometer Controller . . . electric or pneumatic, single or dual point.
Moist-O-Graph . . . For slashers and pickers. Large dial sets for combinations of fibers, sizes, blends.
Recording Thermometer Controller . . . Wide choice of control systems. 2-pen recorders available with choice of control.
Diaphragm Control Valve—Series 800 . . . For heavy-duty service. Many standard sizes.
Small-Case Indicating Pressure and Temperature Controllers . . . Ranges from —40 to 1000 F. Pneumatic control.
ONE-STOP SHOPPING

WHETHER it's temperature, pressure, pH, flow, liquid level, humidity, or any other important variable you want to measure or control, Honeywell makes just the instrumentation for you. Our line is as broad as the textile industry's requirements . . . you can choose exactly what you need.

This means you get all the instrumentation your process requires from a single source, so there is undivided responsibility for the complete installation. And you are assured that equipment suggested for your process is recommended without bias.

For the new process, the modernization program, or a replacement problem, find out how Honeywell can help. Call your Honeywell field engineer. He's as near as your phone.

MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

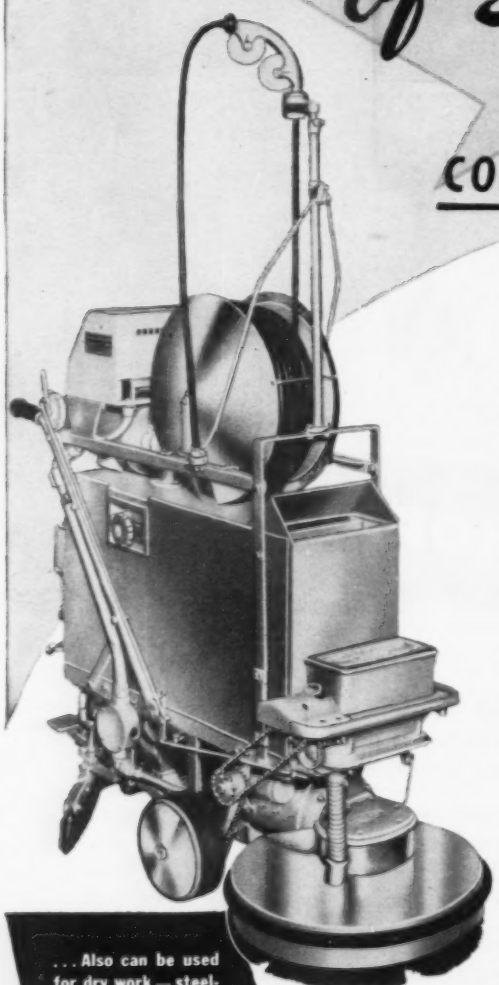
First in Controls

SMALL-AREA BUILDINGS...

Save 2/3 of Every Hour of Scrubbing Time

WITH A

COMBINATION SCRUBBER-VAC!



...Also can be used for dry work—steel-wooling, et cetera

(Powder Dispenser is an accessory)

Today, even buildings with but 2,000 to 15,000 sq. ft. of floor space can reap the labor-saving, cost-reducing benefits of *combination-machine-scrubbing*. Here's a *Combination Scrubber-Vac, Finnell's 418P* at left, that's specially designed for such buildings. This *electric* unit, with its 18-inch brush spread, cleans floors in *approximately one-third the time* required with a conventional 18-inch machine and separate vac.

The *418P* applies the cleanser, scrubs, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit... the thoroughness with which it cleans... and the features that make the machine simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Compactly built, the *418P* also serves advantageously in larger buildings for the care of floors in narrow aisles and congested areas, and is available on lease or purchase plan.

Finnell makes *Scrubber-Vac Machines* for small, vast, and intermediate operations, and in *gasoline* or *propane powered* as well as *electric* models. From this complete line, you can choose the size and model that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that *a Finnell Floor Specialist and Engineer is nearby* to help train your maintenance operators in the proper use of the machine and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1906 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

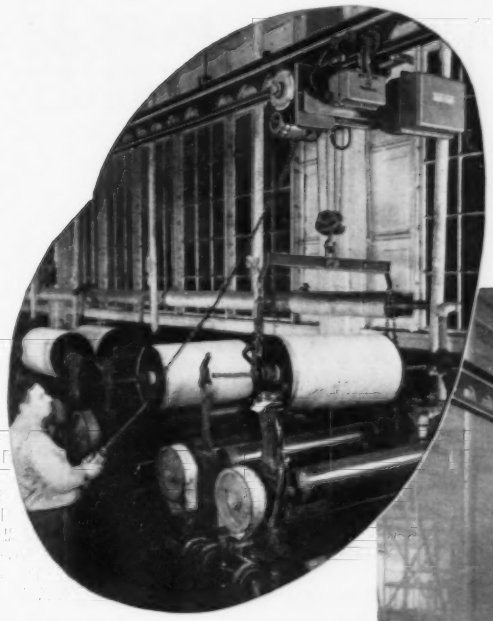
FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

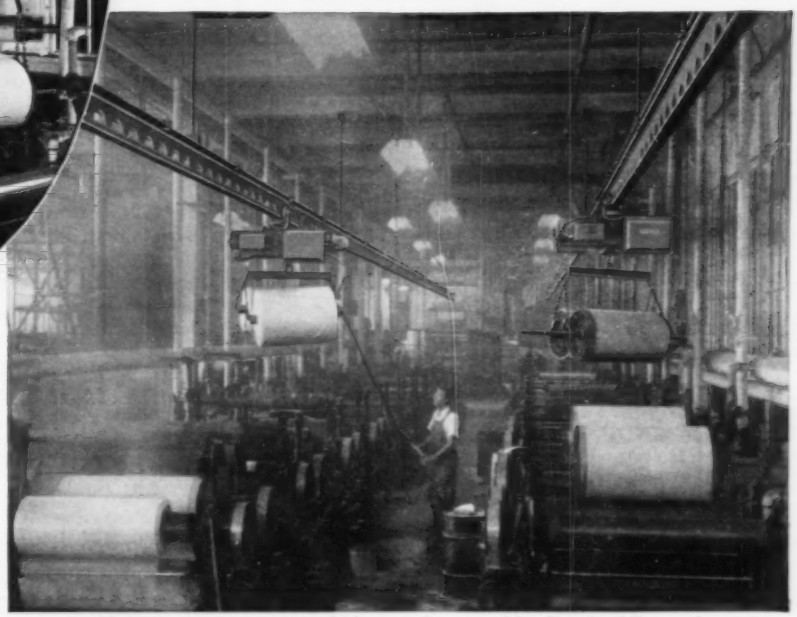
BRANCHES IN ALL PRINCIPAL CITIES

← For more data, write this page number on Reader-Service card.



Handles Rolls into DYEING JIGS IN ¼ NORMAL TIME

Makes Hard Job Easy, Fast, Safe and . . . Pays for Itself in Less Than One Year



23 dyeing jigs in operation 24 hours a day served by Cleveland Tramrail system. The motor-driven carrier with electric hoist picks up the rolls in storage, delivers them to the jigs and sets them in place

A CLEVELAND Tramrail installation in the Jig Dyeing Department of a large mill has reduced a hard job fraught with danger to a simple, easy, safe task, and has reduced the time for conveying and lifting rolls in and out of the jigs to one-quarter of that formerly required. The installation has fully paid for itself in less than one year.

Rolls of cloth are taken directly from the storage section to the Dyeing Department without rehandling. A transfer bridge gives complete coverage of the roll storage and interlocks with the two tracks serving the dyeing jigs.

Thus one man can handle rolls from storage to jigs without assistance and the former danger of hernias, mashed fingers, toes, and more severe injuries is eliminated.

Cleveland Tramrail equipment requires very little maintenance and is easy to use. Operators need to have no previous experience.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8463 E. 287 ST. • WICKLIFFE, OHIO

For more data, write this page number on Reader-Service card. →

NOW—CHECK ACCURACY WHILE YOU CHECK MOISTURE!

New Electronic Moisture Registers have first "built-in standard" in a 3-second, portable moisture tester.

NOW DIAL ACCURACY IS ASSURED, even under the extremes of production-line use. With *self-checking standard*, Moisture Register's new Model 5's are checked and adjusted for calibration accuracy right on the job—by any untrained operator. He simply fits electrode to standard. Then with new trimmer he sets dial for perfect alignment. Gives calibration adjustment *in the field*. You get practical accuracy down to 0%... 3-second spot tests for moisture wherever your product may be. Portable, light weight, battery operated, new rugged construction with miniature tube. Factory-set to your needs.

For faster testing of—

- Wool, Cotton, Rayon, Nylon, Dacron, Orlon—practically any textile.
- Yarn: cones, beams, skeins.
- Fabrics: loose or compressed.

SEND FOR NEW TECHNICAL DATA and information on 2-week free trial.

ELECTRONIC MOISTURE REGISTER Instruments

Moisture Register Company, Dept. TW
P. O. Box 910, Alhambra, California
Please send data on new Model 5's.

We are testing _____

in moisture range from ____% to ____%

Firm _____

By _____ Title _____

Address _____

City _____ State _____

How To Keep Moisture out of Compressed-Air Lines

Wet compressed air is an expensive nuisance. It carries dirt and sediment through pipes and collects in low spots to cause water hammer, which jars loose scale, rust, and dirt in the lines. When exposed to freezing weather, it can plug or even burst piping.

All air contains some moisture. The ability of air to retain vaporized water increases as the temperature is raised and decreases as it is cooled; relative humidity is directly related to temperature. For example, air that has a relative humidity of 80% at 70° F. would be only 40% saturated at 90° F.

Pressure has the opposite effect. In this relation, air is like a sponge: the harder you squeeze it, the less water it can retain.

In a compressed-air system, air enters the compressor at ambient or atmospheric pressure and temperature. It is then compressed to a higher pressure.

This compression raises the temperature, but the air is never used at the temperature of compression. Heat is dissipated through the cylinder walls, air lines, and receiver to the surrounding atmosphere. And if an aftercooler is used, heat is dissipated to the cooling water in it.

As the air then travels through the tubing, pipe, or hose to the point of use, more heat is lost and the temperature is reduced further, possibly to room temperature or below.

Changes Cause Condensation

These changes in temperature and pressure cause the condensation that occurs in any compressed-air system, even in dry climates. For example, if free air at 50% r.h., which is rather dry for atmospheric air, were compressed to 100 psi. and cooled to room temperature, it would then have a relative humidity of 400%, a foggy condition. Any further compression or cooling would precipitate water in the lines.

There are several ways to eliminate this water from air lines. In all instances, correct piping and draining will help; but when they are not adequate, aftercoolers can be employed to condense the water before the air is distributed.

For unusual applications where cooling water is not available or where air lines must pass outdoors through freezing temperatures, special desiccant dryers may be used. The first two methods are used in the majority of installations.

Prevention Starts at Installation

Correct piping and draining often provide reasonably dry air at the point of use. Even though additional drying methods are used, attention to installation details helps provide air that is satisfactory.

One of the simplest and most effective ways to decrease air contamination and increase compressor efficiency is to locate the compressor intake outside the building on the coolest side. Because this cool outside air is more dense than indoor air, a greater quantity of air will be delivered to the compressor.

For example, if the outside air temperature averages 40° F., only 943 cu. ft. of outdoor air will be needed to deliver the same weight as 1,000 cu. ft. of indoor air—a direct saving of nearly 6%. The greater the differential between outdoor and indoor temperatures, the greater the economy will be.

Care must be taken, however, to avoid locating the intake near steam or air exhaust vents, which would add moisture to the air. The location should also be free of fine industrial dusts, lint, or any other source of contamination.

Air-Receiver Setup Is Critical

If the receiver is vertical, air should enter at the top so that moisture can fall directly to the bottom, where it will collect. The outlet from the receiver should be in the shell near the top. A drain must be installed in the botton of the receiver and should be opened daily to remove all accumulated water.

If automatic drainage is desired, an automatic trap can be used, preferably of the inverted-bucket type. A

ARE YOU INTERESTED IN GETTING 2 MACHINES for the PRICE of 1

We offer from our assembly line, completely new and especially designed fully automatic, fool-proof and versatile 4-section, full fashioned **Garment Machines** (Model GM-2)

- with fine and coarse gauge features built into each unit of 28" or 32" knitting width.
- In addition these multi-purpose machines give you, in each gauge, stripers, filers, intarsia, lace and other features. Also all widening and narrowing movements are double-gauged . . .
- at no extra charge. All you pay is the price of one machine.

TO TOP ALL THIS – we also offer the very latest **SCHAFFHAUSEN RIBBER** (MDA-2) which . . .

- gives you three times the production of a single lock machine for less than half price. Double head, double lock, automatic changes on both sides—highest speeds of any machines in trade.

If you are interested in SAVING MONEY. . . here is your chance – Ask for samples and judge for yourself!

ROBERT REINER, INCORPORATED

Telephone: UNion 7-0502—From New York City call LOngacre 4-6882

WEEHAWKEN *(Only 10 minutes from Times Square by direct bus)* **NEW JERSEY**

AN HONORED NAME IN TEXTILE MACHINES SINCE 1903

For more data, write this page number on Reader-Service card. →

SEAMLESS!
SNAG-FREE!

Now you can get Diamond Fibre Roving Cans in the big 16" and 18" diameters from regular stock at the Spartanburg plant-warehouse.

Static-free rolled fibre top rim for running synthetics; one-piece steel top rim; or swedged top rim—these meet all roving requirements.

CDF Diamond Fibre Roving Cans are smooth, strong, long-lived. Their interior surface, like porcelain, resists cracking and softening—won't snag yarns.

Make the CDF Spartanburg warehouse (834 Hayne Street, Spartanburg, S.C.—Tel. 3-6397) your headquarters for fibre and Celoron loom parts, gears, trucks, and mill boxes. Call Spartanburg or write for CDF Receptacles Catalog.

CDF **CONTINENTAL-DIAMOND FIBRE**
A Subsidiary of The Budd Company
Newark 55, Del.

similar arrangement should be used with horizontal receivers. The entrance should be at the head; the outlet should be in the shell on the top side near the head. A bottom drain is also required.

Air lines must be large enough to handle demands from machines and services without excessive pressure drop. These lines should be slightly pitched so that any moisture that condenses will flow in the same direction as the compressed air.

At the end of the line or at a low point in the line, a drop leg should be installed to collect condensate. Either a hand valve or an automatic trap can be used to drain this leg.

Lowered Dew Point Keeps Air Dry

Service lines should be taken from the top of the main. Although this arrangement usually requires two elbows, it guarantees that air taken from the main is dry. Any condensate in the main flows by on the bottom.

Use a check valve wherever there is any chance of liquids backing into the system from other sources, such as in air-purging systems. To remove any remaining water from the air before use, a moisture separator is usually installed in the service line immediately ahead of the point of use. The air will then be practically dry.

Completely dry air can be obtained by reducing the dew point of the air, before distribution, to a valve lower than the lowest temperature that the air will encounter in any part of the system.

Aftercooler Reduces Dew Point

An aftercooler can be used for dew-point reduction. Aftercoolers may be mounted either vertically or horizontally for best space utilization or simplest piping.

Water flows through the aftercooler in a direction counter to the air flow so that the water inlet is at the air-discharge end of the cooler. Automatic valves may be used to control the water flow.

Discharge water from the aftercooler can then be used for compressor cooling. This slightly cooled water is better for this service than extremely cold water.

Air from the aftercooler enters the head of the receiver, and the drops of water fall to the bottom, where they are drained out. A thermometer in the cooler outlet permits the operator to make certain that the correct amount of cooling water is being used. For protection, a pop safety valve must be placed between the compressor and the aftercooler or any possible source of obstruction in the air lines.

Moisture Separator Removes Water

Any water carried through the receiver can be removed by a moisture separator. The type of separator commonly used consists of a cylindrical chamber into which the air flows tangentially to produce a swirling motion. The drops of water, which are heavier than air, are thrown to the walls of the chamber. From here, they run down into the drain at the bottom of the separator, where they are expelled automatically by a trap or manually by a valve. The air flows through a filter made of porous material that permits the passage of air but prevents the passage of water and oil.

When the separator is at the outlet of the aftercooler, it may be overburdened, for it has to remove all the moisture. It is better to place it in the line from the air receiver so that much of the moisture will first drop out in the receiver, which leaves less work for the separator. The result is drier air. *A. N. Gustafson, Chief Engineer, Schramm, Inc.*

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 166

Plastic Cleaner

A powerful all-purpose plastic cleaner with prolonged antistatic effectiveness has been developed by S. M. Edison Chemical Co., 2710 S. Parkway, Chicago 16, Ill.

Circle T-30 on Reader-Service Card

Isolator Cabinet

A completely self-contained and isolated work space is provided by a laboratory cabinet developed by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. The cabinet has its own lighting and ventilating system and is equipped with gas taps and electric-service outlets. Radioactive materials, high-purity materials, and toxic chemicals can be handled in the cabinet without danger to the operator or contamination of the chemicals by outside sources. Special shielding materials are available, as are remote-control facilities and special-purpose auxiliary equipment.

Circle T-31 on Reader-Service Card

The New Ideal Drawing Frame

Premium Quality Sliver At Unmatched Speed

Highest Production

New Ideal Drawing Frames are producing premium quality sliver at higher speeds than ever before attained by any drawing frame. They are simple to operate and require a minimum amount of upkeep.

Compact and Flexible

Each four-delivery frame has its individual one h.p. motor, Vacuum Cleaning System, and Collector Box. Saves floor space and simplifies machine arrangement. Frame height is kept to a minimum, 57" for 36" cans and 64" for 42" cans. All parts are easily accessible.

Smooth Running

Motor is mounted on brackets off the beam, and drives an electro-magnetic clutch. This clutch drive eliminates counter shafting, line drive pulleys, and flat belting and practically eliminates vibration even at highest speeds. Revolving parts have permanently lubricated and sealed ball bearings.

Smooth Starts—Instant Stops

Push button controlled electro-magnetic clutch, through a rheostat, provides slow starts and smooth, rapid acceleration. Electric stop motions, with electro-magnetic clutch and individual signal lights, control trumpet, yardage counter, top roll, and spoon knockoffs. They assure instant stops at any frame speed.

Friction Free Coiling

Special alloy metallic coiler tube gears are suspended on heavy duty ball bearings, turning freely and not riding or dragging on a spectacle plate raceway. A redesigned coiler drive includes enclosed ball-bearing bevel gear assemblies that permit the bevel gears to run in sealed reservoirs of grease.

Ideal Automatic Vacuum Cleaning*

Each four-delivery frame has its individual cleaning system, with each drafting roll, bottom and top, being equipped with close-fitting** suction cleaning hoods, extending over the entire length of flutes and roll journals. These eliminate bottom and top clearers and wiper or rubbing parts, and all clearer and roll neck picking. Keeps clearer stubs from entering stock—removes a greater percentage of dirt, trash, and non-spinnable fibers—and mill tests show that it pulls out, as waste, less than 1% of good staple. The Ideal Vacuum Cleaning System also keeps rolls cool at high speeds.

When You Need New Drawing Frames, compare Ideal Drawing Frames with any others before you buy. We invite comparative tests.

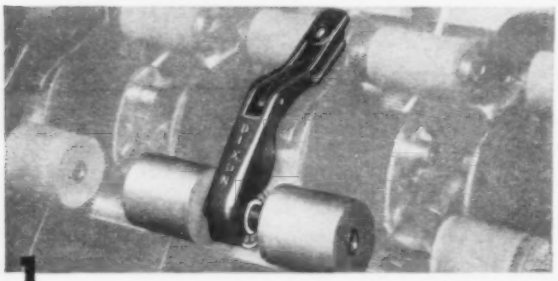
*Pat. Pending

**.005" clearance between roll and cover

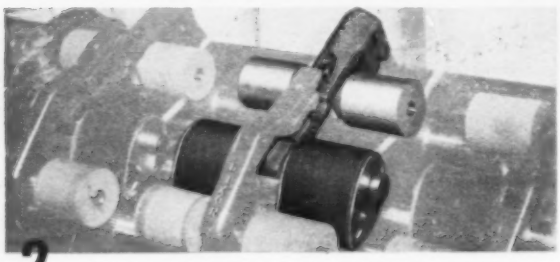
Ideal Industries, Inc.
Bessemer City, N. C.

For more data, write this page number on Reader-Service card. →

2-Step Installation of DIXON *self-aligning* *Super Saddle Guide* can spread out your investment



1. Install Dixon front roll and saddle combination to eliminate all front roll oiling. Throw away front cap bar blocks, major source of dirt and wear. Save money from the outset, get almost immediate return of full investment.



2. Add Dixon middle and back rolls and saddles to reduce drafting costs still further with elimination of all oiling; lessen cleaning requirements; spin stronger, more even, spotless yarns. Complete your installation this way any time — no parts wasted, no costly elements to throw away.

Proved By Over 100 Leaders

Dixon Saddle Guide assemblies for more than 1,000,000 spindles (Duo-Roth or Casablanca type spinning) have been proved in service by over 100 textile production leaders like Deering-Milliken (92,000 spdls.)

Cartex Mills (72,000 spdls.)
Martha Mills (38,000 spdls.)
J. P. Stevens (73,000 spdls.)

Dixon's complete changeover costs much less than any competing roll weighting device; eliminates all top roll cap bars and all oiling, is so perfectly engineered that misalignment is impossible.

Write for complete data on Dixon Super Saddle Guide

724-7

DIXON CORPORATION

BRISTOL RHODE ISLAND

Southern Sales: R. E. L. Holt, Jr., and Associates, Inc.
Box 1319, Greensboro, N. C. and Lawyer's Office Building, P. O. Box 321, Greenville, S. C.

Manufacturers of Drafting Devices since 1876

NEWS ABOUT SUPPLIERS

ALLIED CHEMICAL CORP., SOLVAY PROCESS DIV., New York, N. Y.—Has named Dr. W. H. Hartford research supervisor at the Baltimore, Md., plant (Mutual Chromium Chemicals). William H. Weed has been named principal engineer, and G. E. Best has been named technical advisor to the general manager. . . . **ALLIS-CHALMERS MFG. CO.,** Milwaukee, Wis.—Has appointed R. J. Dineen sales manager of the General Products Div., Central region, with headquarters in Cleveland, Ohio. . . . **AMALGAMATED CHEMICAL CORP.,** Philadelphia, Pa.—Has appointed Virkler Chemical Co., Greensboro, N. C., Southern representative. . . . **AMERICAN AIR FILTER CO., INC.,** Louisville, Ky.—Has named W. Peters manager of the New York City branch office.

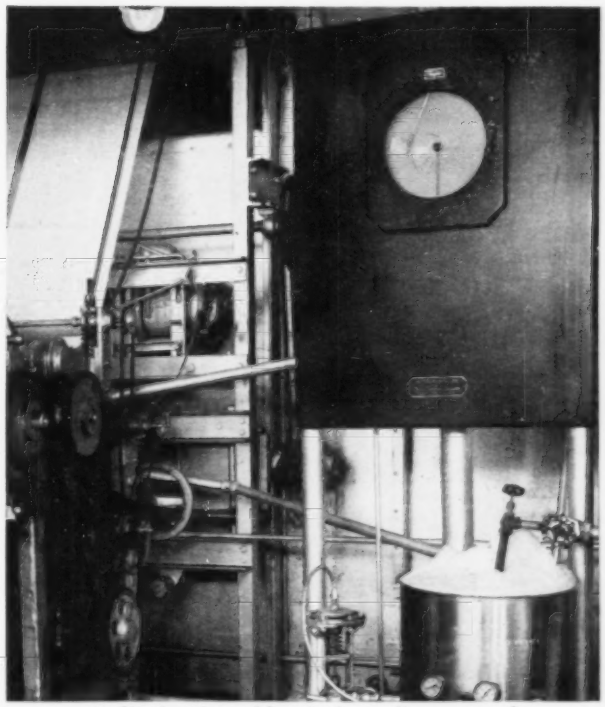
JOHN G. FRISCHKORN, JR., (left) has been appointed sales manager of the Cleveland Tramrail Div. of Cleveland Crane & Engineering Co., Wickliffe, Ohio. WILLIAM F. ZUNKER (center) has been appointed sales manager, Industrial Boiler Div., Cleaver-Brooks Co., Milwaukee Wis. E. J. TOLLE (right) has been named sales manager of Instron Engineering Corp., Canton, Mass.

AMERICAN CYANAMID CO., New York, N. Y.—Has appointed R. W. Angstadt Southern manager of the dyes department and Q. M. Rhodes Southern manager of the textile-chemicals department. J. E. Moore has been appointed assistant to the manager of the dyes department. The company has appointed J. N. Grant sales assistant. M. B. Friedman and W. H. Trotter have been named assistant advertising managers. . . . **AMERICAN MONORAIL CO.,** Cleveland, Ohio—Has bought the assets of Tipp Mfg. Co., Tipp City, Ohio. . . . **CELANESE CORP. OF AMERICA,** New York, N. Y.—Has completed construction of a manufacturing unit at its Belvidere, N. J., plant to produce polyvinyl-acetate emulsions. The company has disclosed details of a program licensing the use of its trademark Celair for its carpet fibers. According to the agreement, carpet manufacturers will be granted the right to use the trademark subject to conditions stipulated by Celanese. The carpet manufacturers will also gain the benefit of the company's advertising and sales-promotion campaign.

CENTURY ELECTRIC CO., St. Louis, Mo.—Has built two office-warehouses in Fairview, N. J., and Cleveland, Ohio. G. Moe is manager of the New Jersey headquarters, and F. Hatfield is manager of the Ohio headquarters. . . . **CIBA CO., INC.,** New York, N. Y.—Has promoted F. Schlaeppi to the new post of technical manager of the New England district, with offices in Rumford, R. I. . . . **CLEAVER-BROOKS CO.,** Milwaukee, Wis.—Has broadened its sales organization by forming five sales districts within its General Sales Div. R. W. Watson is manager of the Milwaukee, Wis., district; and F. R. Goulding heads the Atlanta, Ga., area. R. E. Costin is manager of the Dallas, Tex., district; and W. B. Stoehr is manager of the San Francisco, Calif., area. Still to be named is the New York area sales manager. . . . **CONTAINER CORP. OF AMERICA,** Chicago, Ill.—Has acquired Garmold, Inc., manufacturers of molded plastics, Totowa, N. J., through an exchange of stock.

CUTLER-HAMMER, INC., Milwaukee, Wis.—Has appointed

How to Control Stiffening Agents ...and Save!



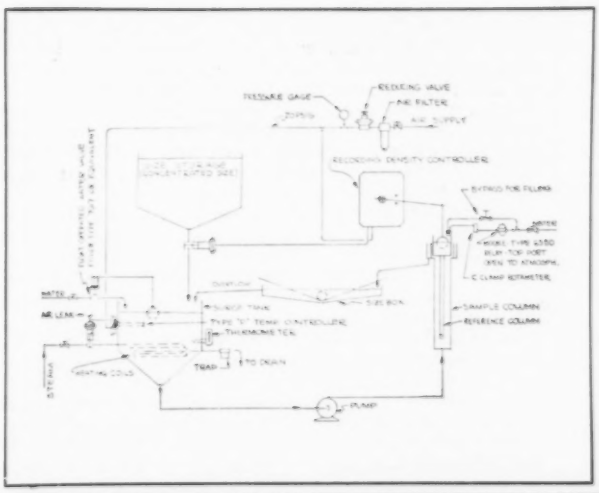
Application pictured here is of recording system only.

You can determine *exactly* how much added weight your cotton knit goods will get . . . enough for efficient handling but not too much for your customers . . . with the Taylor FULSCOPE* Twaddle Control System. This control system gives you exact automatic control of specific gravity and reduces your loss from rejects due to over or under-loading. The Taylor FULSCOPE Controller used in this process gives you continuous automatic control of the specific gravity of the solution, and keeps a permanent chart record of each process.

This classic application of the Taylor FULSCOPE Controller has many satisfied users in the textile industry.

To find out more about this system for use in your plant, see your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ontario.

Taylor Twaddle Control System Holds Goods to Proper Weight... Cuts Down Rejects!



In the schematic diagram at left, the liquid level in the surge tank is maintained by a float-operated valve in the water line. A Taylor Type "P" temperature controller installed in the surge tank operates a valve in the steam supply line to the heating coil, to prevent changes in specific gravity due to temperature change. The specific gravity of the solution in the pick-up box is measured by the position of the reference column of water, which rises and falls in the sample column of solution according to its specific gravity.

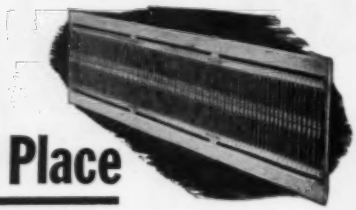
Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

*Reg. U.S. Pat. Off.

Taylor Instruments MEAN ACCURACY FIRST

For more data, write this page number on Reader-Service card. →

Harnesses Cleaned in Place Without Binding Warps



One Pennsylvania textile mill was troubled with heavy deposits of lint, sizing, and dust that built up on their reeds and harness assemblies. Solvent cleaning was ineffective because the sticky soils would drop down into the heddles and cause the warps to bind.

Then, the local Oakite Man suggested spraying the parts with a solution of Oakite Composition No. 12. Results were immediate: Soils and gummy deposits were thoroughly removed, and surfaces dried down smooth and clean with just the right "slip". Oakite Composition No. 12 provided temporary rust prevention, too, and greatly reduced subsequent build-ups of lint and sizing deposits. For more details, write Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE
SCIENCE

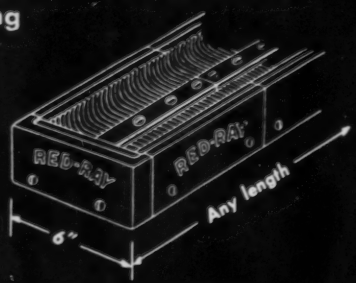
Export Division Cable Address: Oakite

Technical Service Representatives in Principal Cities of U. S. and Canada

RED-RAY
Infra-Red Gas Burners

- Preheating
- Nylon Setting
- Tenter Frame Drying
- Setting Resins — Pigment Dyes
- Singeing

High Capacity
Compact
Low Cost



Write for further information

RED-RAY MANUFACTURING CO., INC.
318 Cliff Lane Cliffside Park, N. J.
Tel: WHitney 3-1000

NEWS ABOUT SUPPLIERS Continued

E. B. Fitzgerald apparatus sales manager. L. P. Niessen, advertising manager, has been given the additional title of public-relations manager. F. A. Wright has been named general sales manager and will be in charge of field sales activity. . . . **DAYTON RUBBER CO.**, Dayton, Ohio—Has named M. D. Coate manager of customer service and L. J. Adams merchandise manager. The Foam Div. has named L. C. Pape general sales manager. . . . **DOW CHEMICAL CO.**, Warwick, Va.—Has assigned R. G. Mansfield to the Boston, Mass., sales office. . . . **E I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Has named W. S. Carpenter, 3rd, assistant general manager of the company's Electrochemicals Dept. He succeeds C. B. McCoy, who has been named general manager of the Elastomer Chemicals Dept.

ARNOLD E. AMADON (left) has been appointed manager of the Nycor Sales Div., Grafton & Knight Co., Worcester, Mass. **RAYMOND W. HARGROVE** (center) has been named sales manager, textile resins, Central-Atlantic Div. of Reichhold Chemicals, Inc., White Plains, N. Y. **JOHN E. HEWSON** (right) has been appointed manager of the New York sales region of Foxboro Co., Foxboro, Mass.

EASTMAN CHEMICAL PRODUCTS, INC., TEXTILE DIV., New York, N. Y.—Has promoted J. W. Malloy, Jr., to assistant to the director of merchandising. . . . **EMKAY CHEMICAL CO.**, Elizabeth, N. J.—Has named T. J. Hall sales representative and technical demonstrator in the Carolinas. . . . **FAIRBANKS, MORSE & CO.**, Chicago, Ill.—Has named C. F. Doepke manager of public relations and advertising. He succeeds H. J. Barbour, who will serve as consultant. . . . **FOOD MACHINERY & CHEMICAL CORP.**, New York, N. Y.—Has created two new operating chemical departments. The first, FMC Organic Chemical Dept., includes Niagara Chemical Div. and Chemical & Plastics Div., formerly Organic Chemicals Div. The second, FMC Inorganic Chemicals Dept., includes Becco Chemical Div., Westvaco Chlor-Alkali Div., and Westvaco Mineral Products Div. . . . **GOODYEAR TIRE & RUBBER CO.**, Akron, Ohio—Has appointed R. G. Luskin West Coast district manager, with headquarters in Los Angeles, Calif.

RALPH GOSSETT & CO., Greenville, S. C.—Has named H. Ford and D. C. O'Hair to the sales force. Mr. Ford will cover South Carolina, and Mr. O'Hair will cover North Carolina and Virginia. . . . **HEYDEN NEWPORT CHEMICAL CORP.**, New York, N. Y.—Has appointed W. L. Vega vice president in charge of sales and advertising for American Plastics Corp. . . . **HOOKER ELECTROCHEMICAL CO.**, Niagara Falls, N. Y.—Has announced that its board of directors has approved an agreement for the consolidation of its company with Shea Chemical Corp., New York, N. Y. . . . **HARRY MILLER CORP.**, Philadelphia, Pa.—Has named U. C. Crenshaw to its sales staff to cover North Carolina and southern Virginia. . . . **MOUNT HOPE MACHINERY CO.**, Taunton, Mass.—Has named A. W. Spears, Jr., sales and service representative in Alabama, western Tennessee, Louisiana, Mississippi, Arkansas, Texas, and Oklahoma.

NATIONAL VULCANIZED FIBRE CO., Wilmington, Del.—Has named J. R. Kallaher general sales manager. D. W. Stewart succeeds Mr. Kallaher as Chicago, Ill., manager. R. E. Bryant has been named Boston, Mass., manager. . . . **C. A. NORGREN**

SPEED: 12,500 rpm

PROBLEMS: none

Quill winding spuns with KIDDE compensators

For 2 years, these winders have operated at 12,500 rpm with the help of a new Kidde double disc compensators, specifically designed for use on spuns and natural fiber yarns. At top efficiency, they've turned out the kind of quills that give top loom performance. There are 5 reasons why these Kidde Compensators give such outstanding performance.

1. You get maximum density control with Kidde Compensators, cutting down on quill changes and assuring uniform quill size as well.
2. There is never any build-up of lint because Kidde Compensators are entirely self-cleaning.
3. Tension is automatically maintained at designed strength of yarn.
4. Kidde Compensators assure absolutely uniform quill diameters.
5. Positive tension control is maintained without any abrasion.

Can you afford to do without these "constant watchmen" over your winding process?

For full information, write to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — JOHNSTON BUILDING, 212 SOUTH TRYON ST., CHARLOTTE, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

NEW The Automated MICRONAIRE

- Speeds up checking two to three times.
- Provides a quick, easy, accurate and authorative measure of fiber fineness.
- Indicates the quality and value of the cotton.
- Indicates the dyeing properties.
- Measures the maturity of cotton.
- Predicts the spin-ability of cotton.
- Forecasts the appearance of the yarn and cloth by indicating the number of neps to be expected.

For NEW Book "Advantages and World-Wide use of the Micronaire in all segments of the Cotton and Textile Industries"

Write to Dept. 30—THE SHEFFIELD CORPORATION

Dayton 1, Ohio, U. S. A.

7515R

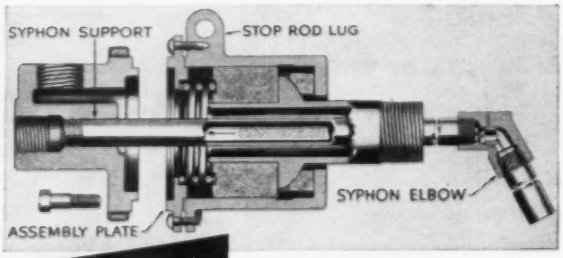
the SHEFFIELD corporation

of Bendix Aviation

manufacture and measurement for mankind

TRY THIS on your Dry Cans and 30" Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



Johnson ROTARY PRESSURE Joints

First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

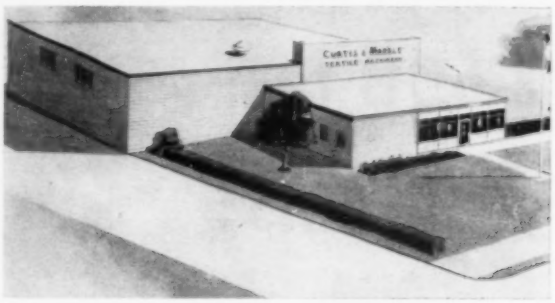
THE JOHNSON CORPORATION

814 Wood St., Three Rivers, Mich.

NEWS ABOUT SUPPLIERS Continued

CO., Englewood, Colo.—Has appointed G. Grange sales manager. . . . **PENICK & FORD LTD., INC.**, New York, N. Y.—Has moved its executive offices to 750 Third Ave. . . . **PITTSBURGH PLATE GLASS CO.**, Pittsburgh, Pa.—Has appointed J. D. Doughty manager of quality control for the fiberglass division. . . . **RAYBESTOS-MANHATTAN, INC.**, Passaic, N. J.—Has named A. N. Johnston, Jr., Central sales manager with headquarters in Chicago, Ill. H. P. McLaughlin has been promoted to district manager with headquarters in Pittsburgh, Pa. . . . **RIDGE TOOL CO.**, Elyria, Ohio—Has named J. E. Butler manager of sales promotion.

RIGGS & LOMBARD, INC., Lowell, Mass.—Has bought Parks & Woolson Co., Springfield, Vt. . . . **JOSEPH T. RYERSON & SON, INC.**, Chicago, Ill.—Has appointed C. Gaubatz head of aluminum sales. . . . **SARAN YARNS CO.**, Odenton, Md.—Has named A. E. Young to the board of directors. . . . **SINCLAIR OIL CORP.**, New York, N. Y.—Has appointed V. J. Olsen Midwest sales representative for Sinclair Chemicals, Inc. . . . **SOUTHERN LOOM DEVELOPMENT CO.**, Greenville, S. C.—Has named J. W. Stuart vice president and general manager. . . . **STEEL HEDDLE MFG. CO.**, Philadelphia, Pa.—Will hold a series of product exhibits in the New England area. They are scheduled for June 9 & 10 at the Sheraton-Biltmore Hotel, Providence, R. I.; June 12 at the Eastland Hotel, Portland, Me.; and June 13 at the Andover Inn, North Andover, Mass.



CURTIS & MARBLE MACHINE CO., Worcester, Mass., is building a plant in Greenville, S. C., scheduled for completion this month. The plant (shown above in an artist's sketch) will house a sales and service office and a warehouse.

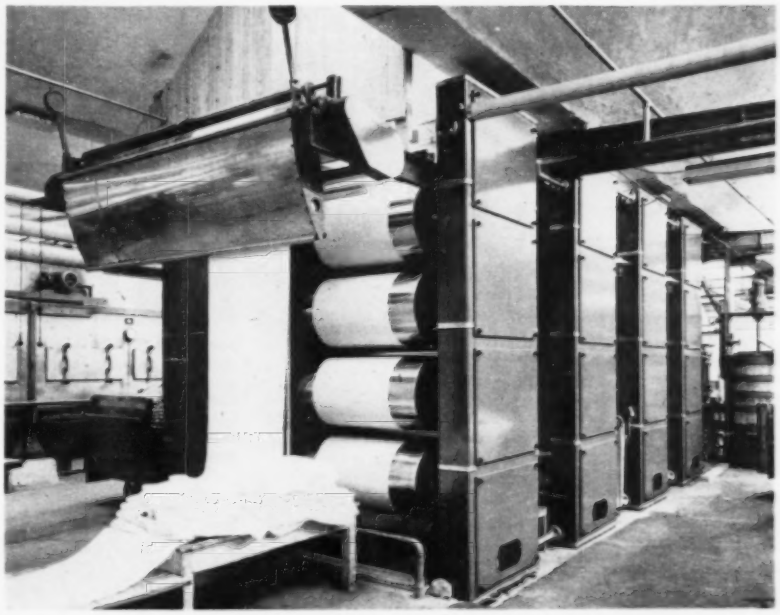
STOWE-WOODWARD, INC., Newton Upper Falls, Mass.—Is offering stickers that say "Whatever you buy in textiles 'made in U.S.A.' gives you quality you can trust." Small quantities may be obtained free of charge. . . . **TAYLOR FIBRE CO.**, Norristown, Pa.—Has named J. J. McLoughlin to the newly created position of market-research manager. . . . **TURBO MACHINE CO.**, Philadelphia, Pa.—Has named W. K. Wyatt vice president. . . . **UNION CARBIDE CHEMICALS CO., DIV. OF UNION CARBIDE CORP.**, New York, N. Y.—Has promoted R. W. Eddy to the position of manager of the New Chemicals Div. . . . **UNITED STATES STEEL CORP.**, New York, N. Y.—Is planning major improvements to its wide-plate manufacturing facilities in the Chicago, Ill., district. . . . **UNIVERSAL WINDING CO.**, Providence, R. I.—Has promoted H. R. Kennedy to sales engineer, with headquarters in Charlotte, N. C. . . . **WHITIN MACHINE WORKS**, Whitinsville, Mass.—Has promoted R. I. Dalton, Jr., to the main sales office. F. A. Odell has been named assistant manager of export sales.

T. B. WOOD'S SONS CO., Chambersburg, Pa.—Has opened a branch office and warehouse at 485 Stephens Ave., S.W., Atlanta, Ga. R. Kriss has been named district representative in southern Ohio and portions of Indiana and Kentucky. . . . **WYANDOTTE CHEMICALS CORP.**, Wyandotte, Mich.—Has named W. F. Conroy resident sales representative for Michigan Alkali Div.

THE
ESTABLISHED 1876

Tattersall & Holdsworth's

GLOBE WORKS AND STORES · ENSCHEDE · HOLLAND



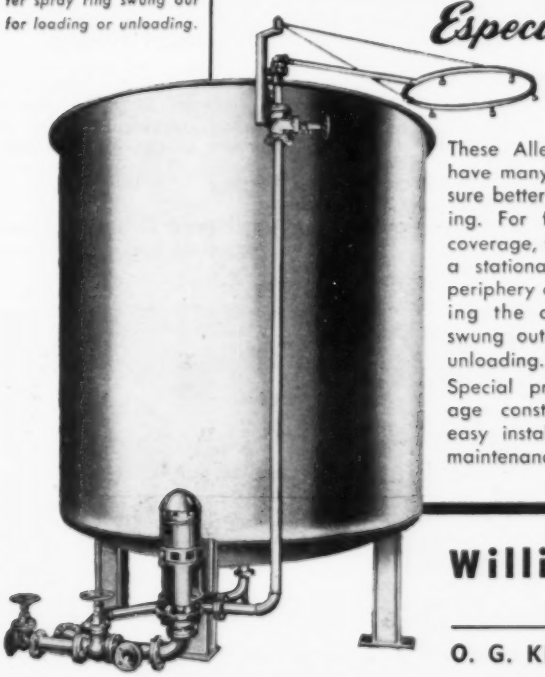
TENSIONLESS DRYING ON

RELAX®

Cylinder Drying Machines

- The shrinkage in the width is reduced to a minimum.
- Glaze effects are mostly eliminated.
- The cloth has a much softer "handle."

The Allen Kier for knit goods showing the center spray ring swung out for loading or unloading.



ALLEN Stainless Steel KIERS

Especially Designed for Bleaching

KNIT GOODS

These Allen stainless steel kiers have many advantages which assure better, more efficient bleaching. For finest bleaching liquor coverage, they are equipped with a stationary spray ring on the periphery and another ring covering the center which can be swung out for easy loading and unloading.

Special prefabricated unit-package construction permits quick, easy installation and lower cost maintenance.

SPECIAL ADVANTAGES

- Lower cost non-stretch operation
- Positive temperature control
- Smooth surfaces eliminate snag and rub marks
- Controlled circulation for efficient bleaching
- Smooth stainless surfaces eliminate rust, snag and rub marks — save chemicals

Write today for circulars giving complete information on this as well as "Package Design" cloth kiers and kiers for absorbent cotton and cotton batting.

William Allen Son's Company

SHREWSBURY, MASSACHUSETTS

Division of

O. G. KELLEY & COMPANY, Boston 22, Massachusetts

For more data, write this page number on Reader-Service card. →

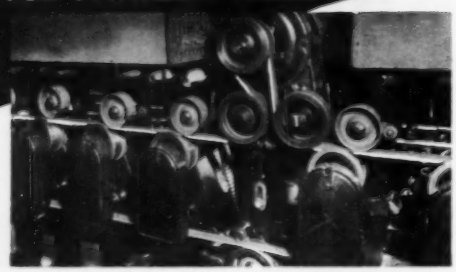
New Instrument Measures Cotton's Nep Potential

A 25-grain sample is prepared by hand cards and placed on the feed plate of the Nepotometer. Total time required for test, including stripping, is about six minutes.

This high precision instrument simulates manufacturing steps. Simply run a sample, compare it with photo standards which come with the instrument, and you know in advance the nep potential. Saves time and money. Permits you to make the most profitable use of your cotton. Literature upon request.

WRIGHT MACHINERY COMPANY
DIVISION OF SPERRY RAND CORPORATION
DURHAM, NORTH CAROLINA
CANADA: Sperry Gyroscope Ottawa Limited
P. O. Box 90, Ottawa, Ontario, Canada
EXPORT: 13 East 40th Street
New York 16, N. Y., U. S. A.

TON-TEX CONER and WINDER BELTS
FOR SYNTHETIC YARNS



Maintain full rated spindle speeds with thin, flexible, high pulley grip Ton-Tex Belt. Uniform thickness gives smooth, vibrationless operation. No stretch problems.

Factory made lapless endless to your size, or furnished in open end roll stock for vulcanizing on your machines.

The Running Mate of Ton-Tex Spinner Belting

Write For Complete Literature

TON TEX Reg U S Pat Off

TON-TEX CORPORATION
31 Columbus Ave., Englewood, New Jersey
GREENSBORO, N. C. 1910 E. Wendover Ave.
BOSTON, MASS. 51 Sleeper St.
Serving Industry Over a Quarter Century

NEWS ABOUT MEN

Marion Allison, overseer of spinning, Eno Plant, Hillsboro, N. C., has been elected chairman of the East Carolina Div. of the Southern Textile Association.

S. Reed Anthony has resigned as executive assistant to the president of Greenwood Mills, Inc., Greenwood, S. C.

Nathan M. Ayers, president of Triangle Hosiery Co., High Point, N. C., has been re-elected chairman of the board of the National Association of Hosiery Manufacturers.

William H. Beattie has been appointed chairman of the board of Woodside Mills, Greenville, S. C.

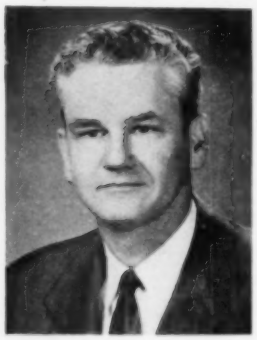
Charles F. Broughton has resigned as vice chairman of the board of Wamsutta Mills, New Bedford, Mass.

James A. Chapman, president of Inman Mills, Inman, S. C., has been named first vice president of the American Cotton Manufacturers Institute.

Robert T. Davis, Jr., has been named a director of Swift Spinning Mills, Columbus, Ga.

J. Neal Dow has resigned as president and director of Vanity Fair Mills, Inc., Monroeville, Ala.

Arthur B. Edge, III, has been promoted to assistant superintendent of Callaway Mills Co.'s Hillside Plant, LaGrange, Ga.



JOSEPH G. SHEDD has been appointed general manager of manufacturing of Fulton Bag & Cotton Mills, Atlanta, Ga. He had been vice president and general manager of Lane Cotton Mills, New Orleans, La.

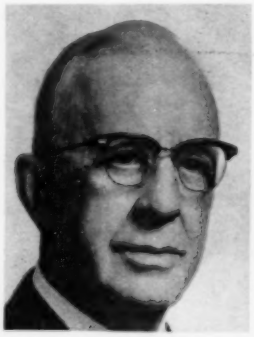
Daniel B. Fuller has been appointed a vice president of J. P. Stevens & Co., Inc., New York, N. Y.

Stanley P. Gordon, Grace Hosiery Mills, Burlington, N. C., has been named a director of the National Association of Hosiery Manufacturers.

James J. Hackett has been appointed vice president of J. P. Stevens & Co., Inc., New York, N. Y.

Lawrence A. Henninger, Strutwear, Inc., Minneapolis, Minn., has been named a director of the National Association of Hosiery Manufacturers.

Howard C. Hurt has been appointed head of the newly



C. S. KINCAID (left) and A. D. CRENSHAW (right) have been elected chairman of the board of directors and president, respectively, of Magnet Mills, Inc., Clinton, Tenn.

New M & W Two-Piece Roller Type tenter clip greatly reduces costly down time . . .

AS SHOWN, a single socket-head cap screw and lock washer rigidly hold the two sections of this new clip together. Accurate machining also locks the two parts together and prevents any movement between them.

In case of damage or wear, the top section can promptly be removed and replaced, leaving the bottom of the chain in place on the frame—and operation can be resumed immediately.

- ★ Savings on down time are exceptional.
- ★ All parts are easily accessible and removable parts are interchangeable.
- ★ No expensive rivets to knock out and replace.
- ★ If whole chain needs repair, this clip speeds up removal—reduces repair cost.

Get all advantages we have built into No. 11 Roller Type Tenter Clip since 1940—*plus* this unequalled new two-piece convenience and economy.

"There are no weak links in an M & W Tenter Clip Chain"

M & W

Send for complete data . . . no obligation

MARSHALL and WILLIAMS CORPORATION
PROVIDENCE, R. I. • GREENVILLE, S. C. • NEW YORK, N. Y.

The Laurel Leaf

BUSINESS MAGAZINE EDITION

SPINOL RLM

Rarely before have textile men been so enthusiastic over a Laurel product as they are with SPINOL RLM!

A really fine anti-static lubricant, Laurel SPINOL RLM is versatile . . . having solved many knotty problems of processors throughout the industry.

One user reports that Laurel SPINOL RLM enables him to card Orlon where before it was impossible to form a lap. His webs literally fell apart.

Another says its improved viscosity properties make SPINOL RLM so much easier to use. Forming a solution in *any* proportion with water, the viscosity is nearly constant —regardless of the degree of dilution.

Others are amazed at the improved handling properties of SPINOL RLM when used as a thread lubricant—especially on multi-ply Nylon. And, they add, the improved viscosity-control makes simple its application on coning machines.

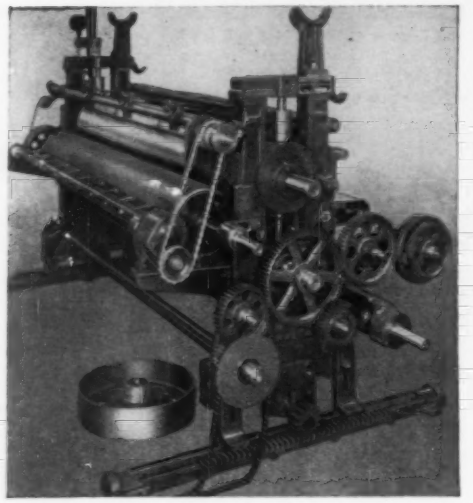
Another user gratefully relates that a particularly difficult problem in running fine count cotton yarns was solved when he tried Laurel SPINOL RLM.

Perhaps *you* have a problem wherein this superior and stable Laurel anti-static lubricant will provide the answer. Write us for your free sample, and be an enthusiast, too.

Laurel SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.
Warehouses:
Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C., Greenville, S. C.

For more data, write this page number on Reader-Service card. →

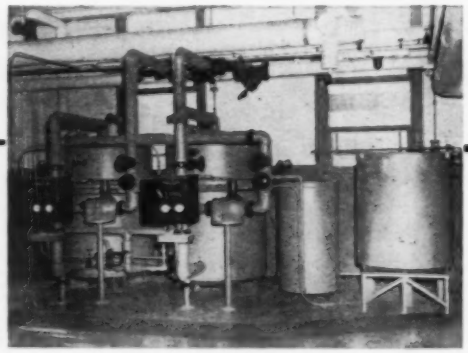
"CONVERSION UNITS"
WILL INCREASE the EFFICIENCY of your
PERALTA® MACHINES
CONVERT NOW TO OUR NEW DESIGN BY INSTALLING:



- Off-Set Roll Arrangement
- Doffing Device Attachment
- Hydraulic Pressure

Write us regarding our new type
DOUBLE RUB TAPE CONDENSER
for adaptation to woolen cards

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P. O. Box 25



INVERSAND WATER SOFTENER PLANT
Producing
CLEAR-IRON FREE 100% SOFT WATER
Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.
CLAYTON 9 **NEW JERSEY**

NEWS ABOUT MEN — Continued

organized plant-development division of the laboratory at Union Bleachery, Greenville, S. C.

Halbert McNair Jones, president and treasurer of Waverly Mills, Laurinburg, N. C., has been named president of the American Cotton Manufacturers Institute.

Louis L. Jones, Jr., president of Canton Cotton Mills, Canton, Ga., has been elected vice president of the Cotton Manufacturers Association of Georgia.

W. J. Kishler has been elected president of St. Marys Woolen Mfg. Co., St. Marys, Ohio.

E. R. Lehmann, vice president of West Point Mfg. Co., West Point, Ga., has been named president of the Alabama Textile Manufacturers Association.

Charles Lovett, Deering, Milliken & Co., Inc., New York, N. Y., has been elected chairman of the Warp Knit Fabric Manufacturers Group of the National Federation of Textiles, Inc.

Wilton F. May has been elected president and general manager of Southern Worsted Mills, Inc., Greenville, S. C.

Thomas O. Moore, P. H. Hanes Knitting Co., Winston-Salem, N. C., has been elected president of the Underwear Institute.

Clifford W. Nelson, Jr., has been promoted to manager of the Bleachery Div. of Thomaston Mills, Thomaston, Ga.

C. CHESTER BASSETT, JR., has been appointed vice president of the Hartford Rayon Div., Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn.

John L. Nisbet has been promoted to vice president and general manager of Carolina Narrow Fabric Co. and Carolina Yarn Insulation Co., Winston-Salem, N. C.

Arthur Nuttall has been appointed superintendent of Pacolet Mfg. Co., New Holland, Ga.

Joe E. Orland has been named superintendent of Imperial Cotton Mills, Eatonton, Ga.

Curt Seifart, secretary of Hudson Hosiery Co., Charlotte, N. C., has been elected director of the National Association of Hosiery Manufacturers.

W. C. Vereen, president of Moultrie Cotton Mills, Moultrie, Ga., has been named president of the Cotton Manufacturers Association of Georgia.

FRED KINCH (left) and J. WILLIAM TIMPERLEY (right) have been promoted at Kenyon Piece Dyeworks, Inc., Kenyon, R. I. Mr. Kinch has been appointed superintendent. Mr. Timperley has been appointed general manager.

Frank B. Ward has been appointed superintendent of Laurens Mills, Laurens, S. C.

R. A. Wells has retired as manager of Bemis Bro. Bag Co.'s Cotton Mill, Bemiston, Ala.

Joel A. Weston has been named to the newly created position of vice president of operations at Hanes Dye & Finishing Co., Winston-Salem, N. C.

James Wilson has retired as president and director of Forstman Woolen Co., Passaic, N. J.

Paul Wood has been promoted to plant manager of Hanes Dye & Finishing Co., Winston-Salem, N. C.

WILLIAM H. ELLIS has resigned as vice president and general manager of Carolina Narrow Fabric Co. and Carolina Insulating Yarn Co., Winston-Salem, N. C., to become executive vice president and general manager of Tryon Processing Co., Tryon, N. C.

Textile World

OBITUARY

Billy Pete Barnes, 58, retired vice president of Dixie Mercerizing Co., Chattanooga, Tenn.

Harry Branley, 78, former owner of Branley Knitting Mills, Honesdale, Pa.

John Catterall, 87, general superintendent of Naushon Mills, New Bedford, Mass.

Allan Leslie Code, 61, president of Code Felt & Knitting Co. Ltd., Perth, Ont.

Charles Cooper, 77, former resident manager of Penman's Ltd., London, Ont.

Claude V. Ellis, 66, retired director of Caldwell Linen Mills Ltd., Iroquois, Ont.

Murray Feiner, 39, head of styling and development at Malden Mills, Academy Div., Fleetwood, N. Y.

Herbert Hughes, 58, board chairman of Cotswold Fibres, Inc., Columbus, Ohio.

J. McLean Johnson, 74, retired president of Bethlehem Silk Co., Bethlehem, Pa.

Robert King McCuen, 80, former superintendent of Grendel Mill, Greenwood, S. C.

Arlan P. Mosser, 55, treasurer of Windsor Knitting Mills, Inc., Hamburg, Pa.

Colonel Harrison Gardner Reynolds, 61, former president, Ipswich Mills, Ipswich, Mass.

John H. Sadler, 71, vice president of Jefferson Woolen Mills, Knoxville, Tenn.

George B. Sessions, superintendent of Newberry Mills, Inc., Newberry, S. C.

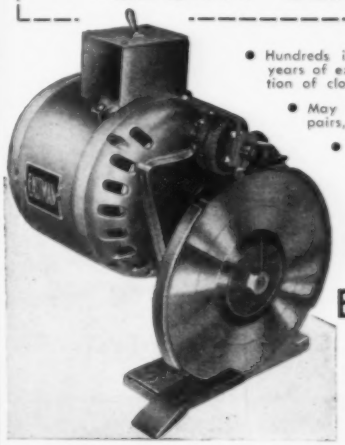
Harold E. Smith, chairman of the board of Wallerstein Co., Inc., New York, N. Y.

George Vincent Slottman, 54, a vice president of Air Reduction Co., Inc., New York, N. Y.

Willard F. Staples, 65, former general manager of Esmond Mills, Esmond, R. I.

• for CONTINUOUS SELVEDGE - TRIMMING, CLOTH SLITTING, or BOTH SIMULTANEOUSLY

EASTMAN model SMS
STATIONARY-MOUNTED
CLOTH SLITTER



- Hundreds in use. Backed by 58 years of experience in the production of cloth cutting machines.
- May be mounted singly, in pairs, or spaced as needed.
- Knife is sharpened while machine is in use.

Send for Folder

DEMONSTRATIONS in YOUR PLANT gladly arranged. Write, wire, or call.

EASTMAN MACHINE COMPANY
Buffalo 3, N. Y.
CLeveland 5768

A copy of this quick-reading, 8-page booklet is yours for the asking. It contains many facts on the benefits derived from your business paper and tips on how to read more profitably. Write for the "WHY and HOW booklet."

McGraw-Hill Publishing Company, Room 2710, 330 West 42nd St., New York 36, N.Y.

For more data, write this page number on Reader-Service card. → 183

COOL any building from the ROOF

effectively, efficiently, economically

Everyone knows how the sun, beating down on the roof of a building, descends into the interior. Even with insulation, this imposes a big load on air conditioning.

Roof cooling is the answer. It can be used on any roof to keep the building cooler and save air conditioning costs. Best equipment for the job is Ruppright's Rotary Roof Cooler. Easily installed within a few hours by your maintenance department, it produces a thin film of water on the roof. This film evaporates but is continuously renewed by the slowly-rotating cooler making the roof cooler than the air.

RUPPRIGHT'S ROTARY ROOF COOLER

Box 43555-TW, Los Angeles 43, Cal.

WRITE FOR FREE FOLDERS

CHAS. T. MAIN, INC.
ENGINEERS

TEXTILE MILLS AND OTHER INDUSTRIAL PLANTS

Electrical, Steam, Diesel and Hydraulic Engineering
Machinery Reorganizations — Water Supply
Investigations, Reports and Appraisals
Construction Supervision

80 FEDERAL STREET, BOSTON, MASSACHUSETTS
317 SOUTH TRYON STREET, CHARLOTTE, N. C.

Industrial Engineers

MODERNIZATION PROGRAMS
PLANT LAYOUTS
MANAGEMENT PROBLEMS
WORK LOAD STUDIES
COST REDUCTION REPORTS
COST SYSTEMS
SPECIAL REPORTS

Specializing in Textiles Since 1914

RALPH E. LOPER CO.

GREENVILLE, S. C. Dial CEdar 2-3868
FALL RIVER, MASS. Dial OSborne 6-8261

When You Change Your Address . .

It will help us to keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

Circulation Manager
TEXTILE WORLD,
330 West 42nd St., New York 36, N. Y.

Please change the address of my Textile World subscription.

Name .....
Old Address .....
New Address .....
New Company Connection .....
New Title or Position .....

EVERY BUSINESSMAN KNOWS...

that the smallest unnecessary motion, if multiplied, can waste time and money.

Yet every year, we are all losing dollars and man hours that could be saved by the simplest act.

Postal zone numbers, included in every address – yours, ours, everybody's – would speed the mails immeasurably.

The Post Office has created postal delivery zones in 106 cities. No address in these cities is actually complete without the zone number.

McGraw-Hill has pledged full cooperation with the Post Office in achieving the most economical and efficient delivery of our publications to you.

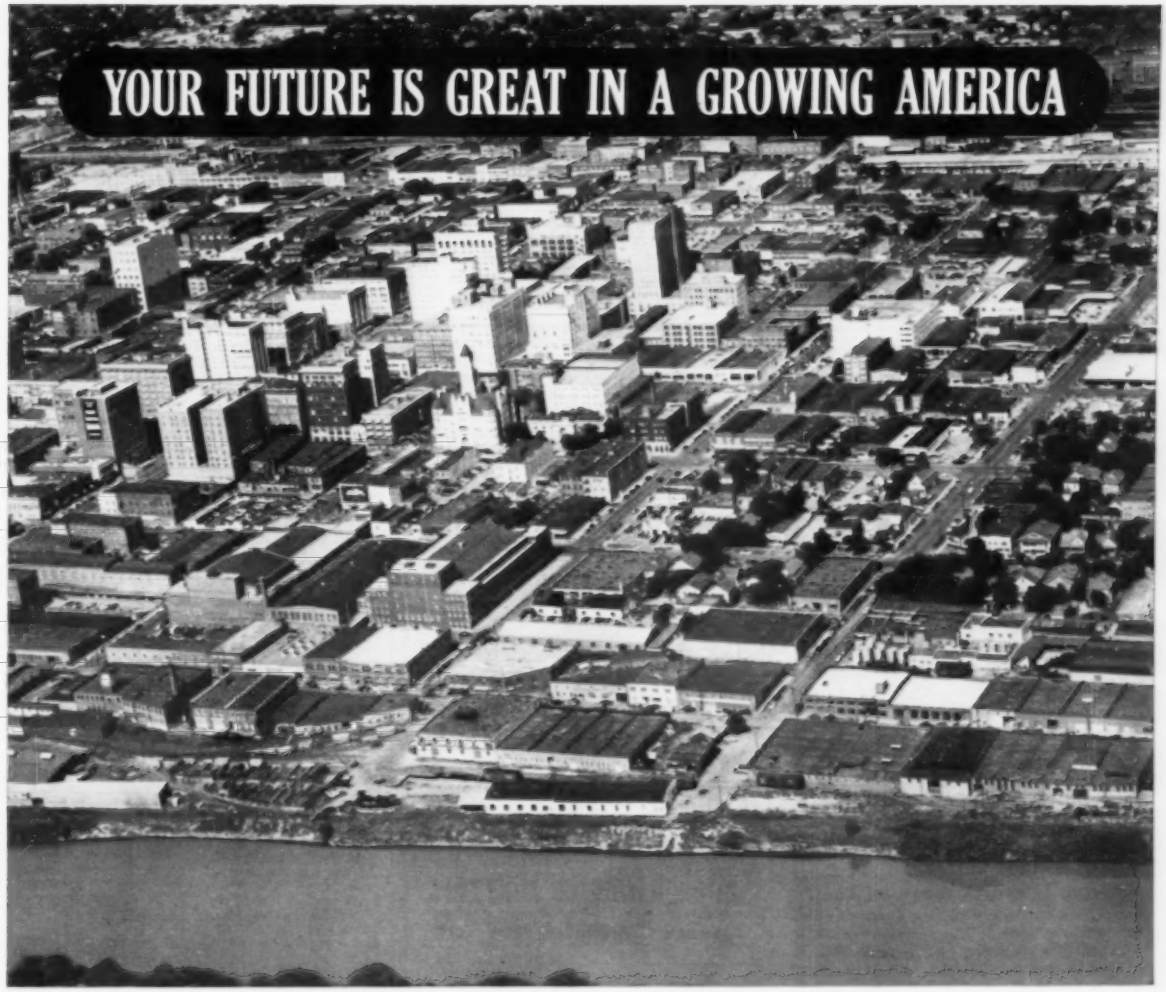
But we also need your cooperation

WHEN SENDING US A CHANGE OF ADDRESS . . .
WHEN SUBSCRIBING . . .
WHEN RENEWING YOUR SUBSCRIPTION . . .
ANY TIME YOU WRITE . . .

Please include your zone number
It will speed your letter
and our reply.

McGraw-Hill Publishing Company

330 West 42nd Street
New York 36, New York



THE CITY THAT DIDN'T EXIST A MONTH AGO

Every 30 days the U. S. adds as many new Americans as live in Norfolk, Va.—creating brand-new wants and needs which must be satisfied.

What does this mean to you? It means greater opportunities than ever before—in all fields. Home construction is expected to double by 1975. Power companies plan to increase output 250% in the next 20 years to provide the power for scores of new labor-saving devices. Clothing suppliers predict a one-third increase in 7 years.

With 11,000 new citizen-consumers born every day, there's a new wave of opportunity coming.

7 BIG REASONS FOR CONFIDENCE IN AMERICA'S FUTURE

1. **More people** . . . Four million babies yearly. U. S. population has *doubled* in last 50 years! And our prosperity curve has always followed our population curve.
2. **More jobs** . . . Though employment in some areas has fallen off, there are *15 million* more jobs than in 1939—and there will be *22 million more* in 1975 than today.
3. **More income** . . . Family income after taxes is at an all-time high of $5300—is expected to pass $7000 by 1975.
4. **More production** . . . U. S. production *doubles* every 20 years. We will require millions more people to make, sell and distribute our products.
5. **More savings** . . . Individual savings are at highest level ever—*$340 billion*—a record amount available for spending.
6. **More research** . . . *$10 billion* spent each year will pay off in more jobs, better living, whole new industries.
7. **More needs** . . . In the next few years we will need *$500 billion* worth of schools, highways, homes, durable equipment. Meeting these needs will create new opportunities for everyone.

Add them up and you have the makings of another big upswing. Wise planners, builders and buyers will act *now* to get ready for it.

FREE! Send for this new 24-page illustrated booklet, "Your Great Future in a Growing America." Every American should know these facts. Drop a card today to: ADVERTISING COUNCIL, Box 10, Midtown Station, New York 18, N. Y.

(This space contributed as a public service by this magazine.)

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

DISPLAYED ——RATES—— UNDISPLAYED

The advertising rate is $16.67 per inch for all advertising appearing on other than a frequency basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads are ½ of above rate.

Box Numbers—counts as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send inquiries to Classified Advertising Division of TEXTILE WORLD, P. O. Box 12, N. Y. 36, N. Y.

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

TECHNICAL WRITER

THE CHEMSTRAND CORPORATION—producer of Acrilan® Acrylic fiber and Chemstrand Nylon—is seeking a technical writer for its Technical Sales Service Department with headquarters in Decatur, Alabama.

Qualifications: **Bachelor degree in textile chemistry or textile engineering from an accredited institution and subsequent experience in the textile trade, including technical writing and preferably textile processing and/or dyeing and finish work. Staff work for a textile trade publication desirable.**

Assignment: **Responsibilities will include preparation of technical bulletins and provisions of other informational services for technical sales service operations. Individual selected will become a member of an energetic, progressive activity that has played a vital role in Chemstrand's advancement to a position of leadership in the chemical textile fiber field.**

Excellent employee benefits and working conditions. Pleasant living and recreational conditions provided by location in the Tenessee Valley. Salary commensurate with academic training and experience.

Prompt and confidential consideration will be given resumes of education and experience, indicating salary background, sent to: Mr. A. D. Preston, Technical Personnel Manager, Box TS-1

The Chemstrand Corporation
Decatur, Alabama

ASSISTANT FOREMAN IN WEAVING DEPARTMENT

Opportunity for Textile School graduate with some practical experience in weaving and handling personnel. Knowledge of weaving cloth and narrow fabrics and weave formations required.

Write to Mr. C. W. WALCK, stating qualifications and salary desired.

JOHNS-MANVILLE PRODUCTS CORP.
200 No. Main Street, Manville, N. J.
RAndolph 5-5000, Ext. 610

WANTED

Progressive textile specialty house interested in representing lines directly connected with weaving. Excellent coverage in N. C., S. C., Ga., Ala., Tenn., & Miss. Office located in heart of textile south. Reply to Box RA-8000 Textile World Classified Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

WANTED

EXPERIENCED BOSS DYER

on worsted and synthetic skein dyeing in Klauder-Weldon machines, and top dyeing in Frederick type machines. Give full and complete details in letter. Information necessary to determine need of interview. All information will be held in strict confidence. Address:

National Worsted Mills, Inc.
Box 666, Jamestown, New York

GOOD OPPORTUNITY

FOR COMPETENT CHEMIST OR CHEMICAL ENGINEER

WITH TEXTILE MILL EXPERIENCE

Large chemical company is looking for an organic chemist or chemical engineer experienced in textile processing to develop knowledge in the use of flexible films in textiles. First choice will be given to the applicant who has background in polymer chemistry, lamination and textile processing.

The assignment will be to develop information in the laboratory for transmittal to customers. The successful applicant must be able to visualize customers' problems and devise solutions. Duties will include working closely with customers to assure that information developed in the laboratory is correctly applied. Prefer age 25-35.

Replies held confidential. Please send complete resume, including salary expected and details of education and experience.

P-7875, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

POSITION VACANT

Experienced Novelty Yarn Foreman accustomed to quality work and capable of handling help Philadelphia area. P-7624, Textile World.

SELLING OPPORTUNITY OFFERED

Active Selling Agents with experience desired by importer to handle Hardwood Picker Sticks in New England, Pa., Southern States on commission. Write with resume to RW-8097, Textile World.

POSITIONS WANTED

Cost Accountant—Office Manager with 12 years experience, fully familiar with preparation of standard cost systems, budgetary controls and cost analysis, inventory controls, mill accounting, financial statements and reports. Experience includes spinning, weaving, dyeing, printing and finishing. PW-7654, Textile World.

Weave room shift overseer or second hand. Any model C&K or Draper. Natural yarns or synthetic. Standard weaves or novelties. 20 years in loomfixing and supervisory positions. Currently employed. PW-7780, Textile World.

Supt.—Plant Manager—Sales. College Graduate, Textile Engineering. Experienced on Woven, Nonwoven, Felt and Cloth Mfg., Wool, Cotton, Jute, and Synthetic Fibers, Cards, Garnetts, sewing, Dies, Sheridan Presses, Production Methods, Costs, Industrial Relations, Product Development, and Auto. Contracts. Now employed as Plant Manager but must make a change. Resume upon request. PW-7834, Textile World.

Textile engineer, 27 years industrial experience, age 50, good health, graduated as chemical engineer from French university, and textile engineer of French institute. Vast experience in weaving and dyeing. Wide experience in spinning. Weaving: supervision of looms, straight looms, mechanical, jacquard, pick-pick, etc.; scientific preparation **and sizing; new ideas** in cloths. Dyeing: Loose, Yarn, slubbing, package, piece, cloth; all standard fibres and new fibres; all dyes and processes; mercerizing, water-proofing, sanforizing, laboratory tests, etc. At present in Bolivia. Was organizer of all the factories which he directed. Speaks French and Spanish, with good knowledge of English. Seeks position as a technical director in a mill preferably in the South of the U.S.A. Write to Raymond Palfray, Casilla No. 2386, La Paz, Bolivia, South America.

Industrial Engineer, 20 years experience in Textiles. Methods, Standards, Wage Incentives, Job Evaluation, Wage Administration, Work Simplification, Supervisory and Craft Training Programs. Now Director of Methods and Standards but desire eastern seaboard location. PW-8018, Textile World.

Textile Consultant. Former Cotton Superintendent. New proven Methods developed uncovering many Wasteful Economics. Savings unlimited. Controls Waste. Quality. Cost. Production; other programs. Consider temporary position. PW-8012, Textile World.

Sales- and Service-Engineer of Textile-Machinery, 45 years old with 28 years experience, expert in automatic quillers, spoolers, warpers, warp-tying machinery, slashers, speaking German, Portuguese, Spanish, English good knowledge, actually serving South- and Central-America desires position corresponding to qualifications. PW-7958, Textile World.

AVAILABLE

TEXTILE MILL MANAGER
FOR LATIN AMERICA

With Textile Engineering Degree and many years years Latin experience spinning weaving finishing cottons and synthetic blends. Excellent Spanish, personnel relations. Can modernize or re-organize.

PW-8050, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CLASSIFIED **SEARCHLIGHT SECTION** ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

WILL BUY
UP TO 1500 MACHINE
BRAID MILL
in Providence R. I. area

INTERESTED IN
17 - 25 and 33
CARRIER BRAIDERS

GIVE DETAILS OF TYPE OF MACHINES, LEASE OR BUILDING—ETC. TO BOX 149, REALSERVICE ADVTG. 110 WEST 34 ST., N. Y. (1), N. Y.

WANTED
STAINLESS STEEL
ROTARY DYEING MACHINE
100 lb. capacity, with compartments and provision for reverse motion.

FOWNES BROTHERS
& CO. INC.
AMSTERDAM, NEW YORK

WANTED
ECONOMY BALER
Late Model Downstroke
Reply W-7930, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

WANTED
3 cylinder 48x60 WOOLEN CARD
Reply
W-7926, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

WANTED
SIPP EASTWOOD HORIZONTAL WARPER AND CREEL
115" or 101".
W-8054, Textile World
Class. Adv. Div., P. O. Box 12, N. Y., 36, N. Y.

MILLER MACHINERY CO.
66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8
Textile Machinery and Supplies
BOUGHT AND SOLD
Warpers • Winders & Quillers • Looms

BUSINESS OPPORTUNITY

Wanted to purchase: Dyeing & Finishing plant. We have a well-rated client who is interested in purchasing a plant of approximately 40,000 sq. ft. equipped with jigs, boxes, steam boilers, frames, etc. Reply in confidence to Harold H. Goldberg & Co., 762 Springfield Ave., Irvington, N. J., A. H. Kesselman.

Excellent Time To Buy— Modern Machinery Priced Low!

2—Aldrich Single Process Pickers, 40", 2 beaters—1950
20—Whitin F-2 Spinning, 4" ga. Long Draft, 240 spdl.—1947
1—Abbott Cone Winder #65, 130 spdl. paper cone, 1954
42—C & K Model W-3 Woolen Looms, 82" 1946-49
4—Abbott Quill Winders, 100 spdl. pin board—1953
68—C & K Model C-4 Looms, 78" swords, 4x1 1949
18—C & K Convertible Looms, C-4, 78", 4x1, 1948
200—Draper XP Looms, 40" cam motor 1949
1—Arlington Scutcher 80", Vacuum Extractor L4, Detwister
1—Dalglish 100'x72" Pin Finishing Range, with Padder, Pre Dryer, 1949
1—V.V. Finishing Range with Hyd. Padder, 100'x64" 1951
1—V.V. Finishing Range with Hyd. Padder, 90'x62"—1946
1—Windle Cloth Doubler 82", 1951
1—Verduin Electric Blanket Washer, 50", 1950
1—Silk type Calender, 3 rolls, 60" wide
1—V.V. Hyd. 80 ton Calender, 3 rolls, 65" age 1948
26—S.S. Enclosed Dye Boxes, 6' & 12'
6—V.V. Duplex Stainless Dye Boxes 12'x8'
3—R. B. & F. Print Machines; 3 color—64", 10 color—52", complete w/ backrigging
3—Mulhouse Print Machines; 10 color—63", w/backrigging
1—R.B.F. 5 Color—48", dry can backrigging, 60" dia., D.C. motor

Republic
TEXTILE EQUIPMENT COMPANY
40 Worth Street, New York 13, N. Y. • COrtlandt 7-1591
• APPRAISALS • PURCHASE AND SALE TEXTILE MACHINERY • LIQUIDATION OF MILL PROPERTIES •

We own and offer for sale—

P & W 3-BLADE DAVIDSON SHEAR WITH MOTOR, FOLDER, ETC.

12 C & K 92" W-3 Automatic Looms, 1945
1 Merrow 60D3B on portable table
9 Foot Power Sewing Machines
1 S.S. Portable Scray
1 Roy Napper Grinder 100"
4 Nash Pumps with Motors, 2-L5, 2-L6
1 P & W Semi Decater, 1947, Pump, etc.
8 Cotton Cards 40"
150 Draper 40" XP Dobby Looms, 1948
1 Sargent Bagging Machine
2 Inspecting Machines 72" Reverse Motor
1 Selvage Winder, Motor Driven
3 Toledo Floor Scales, 1000 lb. Dial.
22 Waste End Blowers—110v
1 Warp Compressor 96" Beamer
48 C & K 82" W-3 Automatic Looms
2 Collins Fancy Twisters, 200 Spindles
5 D & F 2 Cyl Worsted Cards 60" x 54"
42 Spindles Whitin Schweiter Winders
3 Scutchers 72" and 78", complete
4 U. S. Redraws—1951
1 Economy 60" Baling Press, 1954

RUBBER ROLLS • BEAMS • MOTORS • HARNESS FRAMES

ADVANCED TEXTILE COMPANY
P. O. BOX 661 TEL. STUART 1-3633 PROV. R. I.

All Types of Used Machines for Knit Underwear Mills

SCOTT & WILLIAMS and WILDMAN RIBBERS 8 to 16 cut, Sizes to 24"
TOMPKINS SPRING NEEDLE TABLES, All sizes and gauges
WILDMAN SPRING NEEDLE FBSS
WILLCOX & GIBBS FLATLOCKS, MERROWS, SINGER & METROPOLITAN SEWING MACHINES
Also Various types of SPECIAL MACHINES, CUTTING—CALENDERING—PREESSES, Etc.
Send us your Inquiries.

MOHAWK VALLEY KTG. MACH. CO.
Dwyer Ave. at Pixley St. Utica 2, N. Y. Phone 4-8109

FOR SALE

20—U.S. TEXTILE MACHINE CO. TWISTING MACHINES

Face Drive Tapered End Headless Package Double Deck Twisters, 8" spacing, 184 spindles per machine.

Complete with redraws, bobbins, spools and trays.

1—U.S. TEXTILE MACHINE CO. HIGH SPEED VERTICAL SPOOLER

High Speed Vertical Spooler, 7-5/8" traverse, bottle wind, 7" spacing, single deck machine, 100 spindles.

SIZING MACHINERY

16 Gangs Model 250B Universal, Single End, Sizing Machines complete with motors and switches. Like new condition.

3380 Sizing Tubes

564 Tube Caps

PRINCETON KNITTING MILLS, INC.

118 ECHO LAKE RD. CRestwood 4-2535 WATERTOWN, CONN.

FOR SALE

Good Machinery—Low Prices

1—Barber Colman Knotter LC577
1—"Fletcher" 60" Extracter
1—3 Roll Print Machine 60"
Vertical—12 can dryer-copper cans 80" wide 36" dia.
1—VV-70"-High Speed Tuber
1 set—15 SS. Dry Cans 70"x23" dia.
Hinnekins 2 roll padder—new—66"—15 ton
Hinnekins tenter frame—new—S. S. clips 66"x60'
Hinnekins 2 roll embosser 50" new
Hinnekins moire calender 50" new
BB Johnson Joints

STAVE & KESSLER
106 Kearney Street
P. O. Box 1611 Paterson 16, N. J.

FOR SALE!

1—Dalglish 60" Pin Finishing Range
1—Lot "W" Bore 40" and 42" Print Rolls
1—65' x 50" Clip Mercerizer
2—Morrison 50" Williams Units
1—A & G 50" Cloth Curing Box
6—2 to 10 Color 40"-48" Print Machines

JAMES E. FITZGERALD

10 Purchase St. Fall River, Mass.
Tel. OS 8-5616

LIQUIDATION SALE

(13) SPERRY 30" x 30" Filter Presses, 7 chamber
(8) BAKER-PERKINS: 200 Gallon Sigma Blade Jacketed Mixers.

PERRY EQUIPMENT CORP.
1430 N. 6th St. Phila. 22, Pa.
POplar 3-3505

---

2 FOSTER Mod. 102
100 SF., 7" Trav. 5/8" x 15/8" Tubes.

1—S. S. PACKAGE DYE MACHINE 2—CARRIERS

1—SIPP MODEL GK REDRAW—1955

1—Prince & Smith Rectilgar Comb

500 4¾" 10-B RINGS

SCHWEITER WINDERS
2-12 SPINDLE—3 RING
1-15 SPINDLE—THIN LIP

24—U. S.—FACE DRIVE UPTWISTERS

1—COBBLE BROS. 81" TUFTING MACHINE

10—DRAPER 64" LOOMS—1950

4—U. S. 1 LB. DOUBLERS

40—S-6 LOOMS, 72" & 56"

1—SACO CARD

1—ATWOOD 2 LB. 10B

250 UNIVERSAL CONERS #50

4 U. S. HI-SPEED SPINDLESS SPOOLERS

4—U. S. Vertical Spoolers

SMITH DRUM SKEIN CASCADE DYERS
2-20 ARM 2-3 ARM
3-12 ARM 2-7 ARM

2—84" F.N.F. Tricot
1—10 x 5 Roving Frame

BOBBINS—SPOOLS—QUILLS—*All Sizes & Types*

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN PA. Phone 3-7545

MODERN MACHINERY — For Sale

1—P. & S. 18"x36" Ceiling Condenser, 1949
1—P. & S. Double Drum Ceil. Condenser, 1952
1—P. & S. 48" Mod. 513 Bale Breaker Feed, 1944
1—Sargent 6' Duster w/Feed, 1949
1—D. & F. 48", 6 bar Mixing Picker, 1942
1—Clark 48", 6 bar Mixing Picker, 1949
1—Abbott 50 sp. Quill Winder w/Loader, 1954
1—P. & W. "Vertitex" Cloth Exam. Machine, 1952
1—S. D. 7 Arm s/s Skein Dye Mach. 1953

FRANK W. WHEELER CO.
Adams Ave. & Wingohocking St.
Philadelphia 24, Pa. Phone JEfferson 5-4771

MODERN OPERATING

Package Dyeing Plant

Sale, Lease or Merger

Located within radius of 25 miles Phila.

FS-7935, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

THE TIME TO BUY IS NOW!

10—Saco-Lowell Cards 40", 12" coilers
2—Z44 Roto-Coner, 100 sp. 9"15", steel traverses
1—B/C Filling Winder, 36 sp., high speed
2—Kitson 40" sgle process pickers, W/Blending Reserve
94—Whitin Cards, 12" coilers, 50-45", 44, 40"
4—B/C Warp Tying Machines, LC, LL, LS
11—S/L Tape Drive Twisters, 200 Sp. 4" x3"
1—Uxbridge Gentle Air Slasher, 1948
1—S/L 7 & 5' Cylinder Slasher
1—Armstrong Cork Cot Buffing Machine
2—Terrell Model L Bobbin Strippers
2—Electric Box Truck Hoists for Bobbin Strippers
200—Spindles of Whitin Schweiter Winding
1—120 sp Abbott Winder; also 1 100-spindle
187—XD Looms, 1951, Diehl Transmitter, 46" cloth
42—XK Looms, 50" cloth
64—Modified D Looms (34-72", 30-68")
36—XD Looms, 1942, 50" cloth, dobby
290—Model E Looms, various widths, dobbies
350—X2 & X Model Looms, 44" cloth

SUPPLIES
300—Parks Cramer Humidifier Atomizers
350—Veeder Root 3-shift reset Pick Clocks
1,400—Plastic Dobby Sheaves, NEW
3,000—Sliding Bar Stop Motion Rods 53⅞"
240—Loom Beams (NEW) 24", 6P, 44" B/H
24,000—NC727 G758 Armstrong Spinning Cots
2 sets—Taylor Recording Slasher Controls
30—28" Allen Section Beams (Sipp Type)
300—1 HP Loom Motors, A/C, GE, Wnt. 550V
650—¾ HP Loom Motors, GE KT3924 550V
15,000—Heddle Frames, 10, 11, 12, 13" Heddles
Lot XK, XD, K, E Loom Parts
15,000—Canvas Lug Straps, DANCO, NEW
5,000—Gates Texhide C&K pickers NEW
20,000—Pick Gears for XD, E, K, D Looms
5,000—Box Fronts & Stafford Cutters
5—Electric Hoists, 110V & 550V, ¼—2 ton
6—Air Compressors, all sizes
3—Terrell Roving Bobbin Strippers

MACHINERY SALES CORPORATION 22 Elm Street, P. O. Box 367
New Bedford, Mass. Wyman 6-2271

FOR SALE

Royle repeater 1304 hooks fine index. Positive & negative action, cylinder may be moved for one half card step patterns.

E-50, P.O. BOX 2068, PHILA. 3, PA.

Rodney Hunt Stainless Steel Range

composed of a series of 60" compartment Washers, Air actuated Squeeze Rolls, Drying cans, Tanks, driven by Century Electric Synchronous Package unit. Was used for Acetylation of Cotton, Practically new.

WM. E. HOOPER & SONS CO.
Parkdale Ave. and Druid Park Drive
Woodberry, Baltimore 11, Md.

WE OFFER FOR SALE

25—U. S. TEXTILE FACE DRIVE TWISTER • • 1951–1952

160 SPINDLES EACH . . 8" GAUGE . . HEADLESS . . LIKE NEW CONDITION

9—U. S. TEXTILE REDRAW S-51 SPINDLELESS • • 60 SPINDLES EA.

1—U. S. TEXTILE VERTICAL REDRAW • • 100 SPINDLES • • 1954

1—MODEL 65 ABBOTT WINDER

6—FIDELITY REELERS • • 1953 SINGLE ARM • • 45" to 75" SKEINS

350—UNIVERSAL #50 CONERS ALL COMPLETE AND LATE

14—ATWOOD #100 TWISTERS 1951 • • HEADLESS • • 6½" SPACING

3—U. S. TEXTILE DOUBLERS 110 SPINDLES EA. • • 1948 6" GA. • • 4" RING • • 1 LB.

6—RIGGS & LUMBARD DYE BECKS • • ALL STAINLESS STEEL

TOTALLY ENCLOSED • • 7' FRONT TO BACK • • 67" DEEP • • 1951 LIKE NEW

2—200 LB. SMITH DRUM ROTARYS RD-12 • • 6 POCKET • • MONEL

2—R & L STAINLESS DYE BECKS 3' & 4' • • OPEN • • 7' FRONT-BACK • • 60" D

1—FLETCHER 60" WHIRLWIND EXTRACTOR 1951 • • STAINLESS STEEL • • LIKE NEW

2—HUSSONG SKEIN DYERS • • 1951 ALL STAINLESS • • 600 LB. CAPACITY

8—PADDLE DYE MACHINES • • STAINLESS 15-25-100-300 LBS. • • S.D. & STRICKLAND

1—WERNER PADDER • • S.S. • • 60" 5 TON CAPACITY • • EXCELLENT

18—DRAPER XD LOOMS • • 50" • • 1948–1952

DIEHL DRIVES • • 20 HARNESS DOBY • • LIKE NEW CONDITION

1—USTER WARP KNOTTER • • 1951; 2—79" DRAW-IN FRAMES

2—72" REINER DIRECT WARPERS • 1948
2—59¼" COCKER DIRECT WARPERS • 1948

1—TERRILL BOBBIN STRIPPER HOIST & COMPRESSOR • • MODEL 735

100—SPINDLES WHITIN-SCHWEITER AUTOMATIC QUILLERS • • LATE TYPE

NARROW FABRIC LOOMS BUILT TO YOUR SPECIFICATIONS

Wm. Rabinowitz & Sons
TEXTILE MACHINERY, BOBBINS & SUPPLIES
214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

ONLY PARTIAL LISTING • • SUBJECT PRIOR SALE • • SELECTED STOCK OFFERINGS

COMPRESSORS - VACUUM PUMPS

For the Finest in Rebuilts

1902 AMERICAN 1958

100 CFM 150 psi 6x7 Ing.
137 CFM 100 psi 7x7 Ingersoll ES1
234 CFM 135 psi 9x9 Worth HB & Ing. ES1
283 CFM 35 psi 10x7 Ingersoll ES1
321 CFM 125 psi 10x11 & Ing. ES1
437 CFM 40 psi 12x9 Ing. ES New Cylinder
465 CFM 100 psi 12x11 Penn Ing. ES1
505 CFM 125 psi 12x13 Worth HB (unused)
590 CFM 125 psi 13½—8x8 Penn DE2-3-60-220
686 CFM 100 psi 14x13 Ing. ES

628 CFM 100 psi 100 HP
(2) 14x13 Worth HB 100 HP 3-60-220
Starters—Aftercoolers—Receivers

782 CFM 110 psi 15½-9½x10 Ing. XRE

973 CFM 100 psi 150 HP
16-10½x7 Worth Y3-60-440

1016 CFM 55 psi 17x13 Ing. ES

1055 CFM 110 psi 175 HP
(3) 18-11x12 Ing XRE3-60-440

1184 CFM Vacuum 22x9 Ing.
1270 CFM 40 psi 19x13 Ing. ES-1
1410 CFM 35 psi 20x13 Worth HB
1717 CFM 20 psi 23x13 Ing ES

American Air Compressor Corp.
Dell & Tex Streets — North Bergen, N. J.

FOR SALE
TEXTILE MACHINERY - ATTRACTIVE PRICES

1—BEAMING HEAD, Warp Compressor, w/tail support, yarn roll, compressor.
1—DYE BECK, R&L., S.S., 6', totally enclosed, B.B. Hump Reel, motorized.
1—BOARDING & PRESETTING Machine, Turbo Mach. Co., Vertical, 1949.
1—SAMPLE CARD, D&F., Cyl. 11"x15" dia., 4 Workers, 8" Doffer, Comb.
29—WOOL COMBS, Schlumberger, Segment width 310 m/m., 18 Ends.
12—CAN COILERS, Whitin, 12"x36" Can.
1—YARN CONDITIONER, R&L., Wilson, with stainless steel lining.
1—YARN CONDITIONER, Hygrolite, Port., 2 Extractors, Air Compressor.
1—DOUBLING, MEASURING & WIND. MACHINE, P&W., 120 yd. dial, Motor Drive.
1—EXTRACTOR, 40", copper basket, Vert. Underneath V-Belt Drive.
1—DYE KETTLE, New, S.S., Open Type, 36" wide, Oval Reel, Motor Drive.
68—LOOMS, Auto., C&K., W1, 82" R.S., 4x1 Box, 25 H. Head, Motorized.
16—LOOMS, Auto., C&K., W2, 82" R.S., 4x1 Box, 20 H. Head, Motorized.
4—LOOMS, Auto., C&K., 92" R.S., 4x1 Box, 25 H. Head, EWSM., Motorized.
60—LOOMS, Auto., C&K., W3-A Convertible, 82", 25 H. Head, 4x1 Box.
2—NAPPERS, D&F., Single Acting, 72", 14 Gear Driven Rolls, Motorized.
1—NAPPER, D&F., Double Acting, 80", 24 Roll, Stainless Steel Wire.
1—NAPPER, Gessner, Double Acting, 72", 18 Gear Driven Rolls, Folder.
2—NAPPERS, Woonsocket, D.A., 84", 36 Roll, B.B. Cyl., Rolls, Motorized.
1—NAPPER, Gessner, Single Acting, 80", 18 V-Belt Driven Rolls, Motorized.
1—BALING PRESS, Galland-Henning, Open Type, 56" x 36" x 5'.
1—BOBBIN STRIPPER, Terrell, 1947, Auto. Bobbin Conveyor, Motor Drive.
2—PNEUMAFIL SYSTEMS, 1953, 96-150 Spindle Units, 6½" Gauge.
2—SPOOL STRIPPERS, G&Y., for 33½"—56" Spools, Ball Bearing Rolls.
1—TWISTER, Whitin, Fancy, Ring, Mod. B, 200 Sp., 4" Ga., 3" Ring.
2—TRAP TWISTERS, Collins, 1945, 200 Sp., 3¼" Ring, 7½" Traverse.
2—WARP TYING Machines, Barber-Colman, Model AE, K., with Knotters.
12—WEAVING MACHINES, Warner-Swasey, 80", Mod. M2820, Motorized.
1—TUBE WINDER, Abbott, Semi-Auto., 120 Sp., 6" traverse, 7½ Hp. Motor.
2—TUBE WINDERS, Foster, Mod. 101B., 76 Sp., 100 Sp., 6" traverse.

McDOWELL ASSOCIATES INC.

General Offices 41-E 42 Street
New York City 17, N.Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front,
Dock & Water Sts., Hudson, N.Y.
Phone: Hudson 8-3211

BRASS PIN-PLATES All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

SEND US OLD PLATE FOR QUOTATION

Pins in Stainless, Monel, Plain Steel.

All Diameters Any Length

SOUTHERN TEXTILE WORKS
P. O. BOX 404 ANDERSON, S. C.

LIQUIDATION SALE

3—Merrow 60 D3B Sewing Machines with Motors & Tables, also Style 60 ABB.
2—70" V.V. Tubers—1955—$1000 each.
3—70" V.V. Beamers, Heavy Duty 5 H.P. U.S. Vari-Drive, S.S. Rollers, S.S. Slide Tension Expander Device—1955.
6—60" Werner Dye Jiggs, stainless.
1—78" Hunter 15 ton Pneumatic Padder, 2 rubber rolls 78" x 18".
2—Brand New 66" Pneumatic Padders, 2 rubber rolls each, 15 ton & 5 ton.
1—64" Progressive Inspect. & Meas. Machine with reverse, like new—$550.
6—Link Belt P.I.V. Drive Units VM5, 4 to 1, direct driven 10 H.P. Motor 220/440/60.
1—Open Washer, 2 compartments, 2 sets of 66" rubber Squeezers 10" dia.—$1100.
1—64" Progressive Tuber, Hi-Speed—$600.
1—66" Pad Dyeing Machine, 2 rubber rolls 12" dia., Foxwell Guiders—$1500.
14—5' to 16' S.S. Dye Becks, tensionless.
1—60' V.V. Tenter Frame, S.S. Clips.
1—30" Hercules Extractor, S.S. Basket—$350.
1—Woonsocket Napper, 86" wide, 36 rolls, double acting, ball bearing rolls, clothing like new—$1500.
3—Sets of rubber Squeezers 18" x 18".
1—Card Cutter, Fine Index—$200.

A & M BLANK CO., INC.

301-313 East 22nd St at 7th Ave. Paterson, N.J.

oHe wood 2-1367-8

BIALEK'S BEST BUYS

Van Vl. Palmer Tenter Frames With Nat. Housing, Quetsch, Padder
National Loop Dryer 110"
Van Vl. 60" Jiggs
Verduin Padder
S. S. Dye Boxes 2', 6', 12'
National Heat Set Unit
B.C. and Uster Knotters
6—Draper 64" x D Dobby Looms
20—Universal #50 Coners, 1953, With Emulsion Rollers, Pineapple
Draper "0", 80", 90", 100", 110" 936-Hook Single Index Jacquards Available for Above Looms
63—Spindles Whitin Auto. Quillers
1—Sipp 84" Hi-Speed Metal Warper With 840-End Magazine Creel
1—Cocker Beamer, Sipp 820-End, Magazine Creel
4—Sipp Cake Creels
160—Draper 46"x D Diehl Drive, 1951
50—C&K, C-5, Dobby, 4x1 Auto.

THEODORE BIALEK & CO.

6704 EMPIRE STATE BLDG.
NEW YORK 1, N. Y.
LONGACRE 3-4978-9

11-20TH AVENUE
PATERSON, N. J.
LAMBERT 3-5886-7

TEXTILE AUXILIARIES INC.

Selling Out At Bargain Prices Balance Of Modern Equipment At Paramount Prtg. & Fin. Co., Pawtucket, R. I.

1—Complete Weisner & Rapp Bleach "Becco" Unit, Cap. 3500 lbs. per hour.
1—Perkins—100-ton—Combination Embosser & Schreiner Calender.
1—Butterworth 54" 3-Roll Friction Calender.
1—10 Fan National 96" wide Loop Dryer.
1—50" Mt. Hope Scray.
1—Hayssen Packaging Machine—Model 10-20, with Electric Eye.
1—9 Nip Open Soaper 50" wide, with 29—50" Copper Cans, Batcher & Ceiling Folder.

Numerous Other Items: Large Selection of Copper Printing Rolls.
For Detailed List Write or Telephone

146 West River Street **BERT FORTLOUIS** Dexter 1-9650

PROVIDENCE, R. I.

FOR SALE

64—60" S-4 Automatic shuttle changing Looms
18—72" S-4 Automatic shuttle changing Looms
All of these Looms have 20 harness dobby 6 bank stop motion
Spring jack and all other modern features
All Looms are in operation at present time and can be seen in running condition

DARLINGTON FABRICS CORPORATION
NEWTON, NEW JERSEY

SEARCHLIGHT

Equipment Spotting Service

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.) No charge or obligation.

First, read the dealer ads on these pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

SEARCHLIGHT
Equipment Spotting Service
c/o Textile World,
P. O. Box 12, N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

SEARCHLIGHT
Equipment Spotting Service
c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Please help us locate the following used equipment:

.....
.....
.....

NAME .....
TITLE .....
STREET .....
COMPANY .....
CITY .....
ZONE.... STATE 6/58

• PRIVATE LIQUIDATION SALE •

OF THE FORMER KENWOOD TEXTILE MILL

CAVENDISH, VT.

offered by

THE DUNN CORPORATION, P. O. Box 4306, E. Providence, R. I.

in conjunction with

EDWARD KROCK INDUSTRIES, 37 Harvard St., Worcester, Mass.

PICKING & CARDING

2 Davis & Furber, 48" mixing pickers, 6 bar, Emulsion system, Bramwel Feeds, Blowers, M.D.
1 Davis & Furber, 36" Box Duster with Blower, M.D.
2 Curtis & Marble Truslow Blenders, 1953 with Motors.
1 Economy Baler, 30" x 15" x 36" chamber, down stroke M.D.
8 Davis & Furber, 60" x 60", 3 cylinder sets, American T-Slot Arch Cards, complete with Bramwell super feeds, Peraltas, broad band feeds, 96 end, double rub tape condensors, Waste End Blowers, M.D.
1 Abbington Stripping System for 8 sets of cards, with Ingersoll Rand Compressor, Motor and 3 receiving tanks.
7 60" Traverse Grinders.
1 Howard Bros. Tuffer Card Clothing Tension machine.

SPINNING & WINDING

11 Davis & Furber, Model E 120 spindle spinning frames 5" ring, 6½" gauge, 3 shift counters, sectional fluted rolls, M.D.
4 Davis & Furber Model E 96 spindle spinning frames, 5" ring, 6½" gauge, 3 shift counters, M.D.
2 Davis & Furber spoolers, 40 ends each, 43½" drum, Electrical stop motion, 48 live ends. 96 spindle creel, Veeder-Root counters, M.D. with Vari-speed drive.
31,000 spinning frame bobbins.
1 Worthington Air compressor with 10 HP motor.
2 Abbott Filling Winders, 30 spindles each, 9" bobbin with loaders transformers and motors.
1 Abbott Filling Winder, 45 spindles, 9" bobbin, with loader, transformer and motor.
1 Davis & Furber, 111" pinless dressing reel, neck reed, hack stand, spool creel, compressor, beamer, 5 HP motor with D & F, 3 speed transmission on reel, #1 Reeves Drive on beamer.
1 Davis & Furber, 131", pinless dressing reel, neck reed, hack stand, spool creel, compressor, 1955 Warp Compressor Co. beamer, multispeed motor and D & F, 3 speed transmission on reel.

WEAVING

40 C & K, 92", W-3 looms, 4 x 1 automatic, 26 Harness head, 3 shift pick counters, high roll take up A & W filling feeders, automatic let off, KA 4-bank electric stop motion, M.D.

Weave room supplies, harness chain, box chain, reeds, drop wires, loom beams, cloth rolls etc.

DYEING & FINISHING

1 Hunter 60" style 30D fulling mill rubber rolls, spring tension, S.S. lined, boxes, traps and ladder guide, 40 HP motor.
1 Riggs Lombard, 60" Fulling Mill, rubber rolls, spring tension S.S. lined, throat, traps & box, 30 HP motor.
1 Hunter 26B Fulling Mill, rubber rolls, Pneumatic pressure, S.S. lined, throat, traps, boxes and ladder guide, 30 HP motor.
1 Merrow 60D3B Sewing machine on rotary stand.
1 James Hunter 108" Scutcher, hard rubber scroll rolls, Year 1953 S.S. single beater, V Belt Drive.
1 Rodney Hunt, 108" padder, Year 1948 with #2 Reeves Drive, M.D.
1 Kenyon Cloth Dryer, 54" to 100" rebuilt year 1953, four sections, 10 pass, fin type heaters, Foxboro temperature controls, electric guides, overfeed, 4 fans, V belt drive, 1 Buffalo Exhaust fan.
1 set James Hunter 90" squeeze rolls, pneumatic pressure.
1 set James Hunter 72" Rubber Squeeze rolls, Hydraulic pressure, Reeves Drive and link belt gear reducer, 7½ HP motor.
1 Schribner 500# S.S. Stock Dye kettle, 36" x 48", S.S. expansion tank, 24" x 28" porcelain mixing tank, pump, Tag Temp. Controls, 3 HP motor.
1 James Hunter, stock dryer, 4 section, 36" pit feed with 60" extension apron in floor, 36" squeeze rolls, 72" feed box, 64" steel perforated conveyer apron, 4 fans and Foxboro thermometer. M.D.
4 Riggs & Lombard, 72" Stainless steel piece dye kettles, totally enclosed, large hump reels, Foxboro controls, M.D.
1 Rodney Hunt, 12' S.S. piece dye kettle, totally enclosed, hump reel, Foxboro Cyclelog controls, Winfield Smith Gear Reducer.
1 Woonsocket 100" double acting napper Year 1954, 24 rolls with folder, M.D. with Gearhead motor and V Belt.
2 Woonsocket 86" double acting nappers, 24 roll with folders, Gearhead motor and V belt.
1 P & W, Model A shear, list saving motion, folder and motor.
2 108" Teasel gigs, with motors.
1 Scott Cloth tester, Model DH with motor (almost new).
1 Cott Buffer.
1 Oster pipe threader.
1 Traveling crane hoist (almost new).
1 Tennant Industrial floor machine.

MISCELLANEOUS

Scales, Water Coolers, spare motors, Fluorescent lights, Fire Extinguishers, etc.

In East Providence, R. I. Phone GEneva 4-4041

In Worcester, Mass. Phone PLeasant 7-3857

In Ludlow, Vt. Phone Canal 6-2601

• OUR REPRESENTATIVE ON PREMISES •

• ALL OFFERINGS SUBJECT TO PRIOR SALE OR WITHDRAWAL WITHOUT NOTICE •

---

4 VV-70" Tensionless Dye Jiggs Model 720
1200 rebuilt tenter clips, W & J #5
1 set 15 Werner 70" SS cans BB & Johnson joints w/L4 Nash pump
1 VV-60" hyd. quetch
1 Kane 15 hp gas boiler
1 VV-70" tensionless tuber
2 Morrison 70" Dye Jiggs
1 Werner 64" SS Dye Jiggs
1 set of 21 141" SS cans BB Johnson joints, etc.
1 66" VV low-type palmer

MAR-DAY TEXTILES
52-60 BERKSHIRE AVE., PATERSON 2, N. J.
MU 4-5132

FOR SALE—WINDERS

K.E.K.—PN Schweiter Precision Pineapple cone winders purchased new October 1956—now operating. 1 @ 8 spindle, 1 @ 12 spindle, 2 @ 24 spindle; stainless steel oil attachment. Excellent winders for Throwsters and Hosiery Trade.

ATKINSON SPINNING CO., INC.
Manchester, New Hampshire

We own and offer for sale
10B ATWOOD TWISTERS
4 Atwood 10B Twisters 1951, 7" gauge, 4¾" ring, 8" Travis, 100 spindles each.
Now available, running in South.

H. C. SKELTON, INC.
TEXTILE MACHINERY
Telephone 1009 .. .. Union, South Carolina

LIQUIDATING

FINEST DYEING AND FINISHING MACHINERY AVAILABLE FOR SALE IN MANY YEARS

INSPECTION INVITED

HINNEKENS BOIL OFF • CALENDERS • BEAMERS
BUTTON BREAKERS • SEMI DECATORS
DYE JIGGS—ENCLOSED & OPEN • LOOP DRYERS
DYE BECKS—ENCLOSED & OPEN • DRY CANS
TENTER FRAMES—ENCLOSED & OPEN • TUBERS
WILLIAMS UNITS • PADDERS • PALMERS
PRINT MACHINES • AGERS • KETTLES
CHROME PLATING UNIT FOR COPPER ROLLS
QUETCHES • NAPPERS • SINGERS
CONTINUOUS BLEACH RANGE • PACKAGE DYEING UNITS

PHONE—WRITE—WIRE—FOR FULL DETAILS

SOUTHERN OFFICE
IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, South Carolina
Tel: Cedar 2-3561

IPA

NORTHERN OFFICE
INDUSTRIAL PRODUCTS OF AMERICA
140 Market St., Paterson, N. J.
Tel. Sherwood 2-6614 Cable: Texindus

INDEX TO ADVERTISERS

An * indicates advertisers who have essential technical information on their products in the **IMPORTANT** 1957-1958 **FACT FILE** issue.

Alemite Div.
Stewart-Warner Corp. ... 126
*Allen Son's Co., Wm. ... 179
*Allen-Bradley Co. ... 3rd Cover
Allis-Chalmers Mfg. Co. ... 163
*American Enka Corp. ... 145
Anheuser-Busch, Inc. ... 83
Antara Chemical Div.
General Aniline & Film Corp. ... 95
Armstrong Cork Co. ... 24-25
Arnold, Hoffman & Co., Inc. 111
*Atkinson, Haserick & Co. ... 119
*Aurora Pump Div.
The New York Air Brake Co. ... 162

*Bahnson Company ... 26
Barber-Colman Co.
Textile Div. ... 161
Brainard Steel Div.
Sharon Steel Corp. ... 39

Carrier Corp. ... 154-155
Cleveland Tramrail Div.
Cleveland Crane & Eng'g. Co. ... 169
*Clinton Corn Processing Co. 91
*Cocker Machine & Fdry. Co. 34
Comer Machinery Co. ... 113
*Continental-Diamond Fibre Div
The Budd Co., Inc. ... 172
Crane Co. ... 165
*Curlator Corp. ... 37

Dayton Rubber Co., The
Textile Div. ... 40-41
Deutscher Spinnerei-maschinenbau, Ingolstadt 35
*Diehl Mfg. Co. ... 153
Dixon Corp. ... 174
Dodge & Olcott, Inc. ... 97
Dow Chemical Co. ... 102, 122
*Draper Corporation ... 11
Duesberg-Bosson of America, Inc. ... 182
*duPont de Nemours & Co., Inc.
Electrochemical Dept. ... 84
Film Dept. ... 135

Eastern Gas & Fuel Assoc. 141
Eastman Machine Co. ... 183
Esso Standard Oil Co. ... 149

Fairbanks Co. ... 16
Fairtex Corp. ... 137
Fidelity Machine Co., Inc. 20
*Finnell System, Inc. ... 168
*Foster Machine Co. ... 129
Foxboro Co. ... 160
Franklin Process Co. ... 125

Gardner-Denver Co. ... 142-143
Gaston County Dyeing Mach. Co. ... 150
Gates Rubber Co. ... 159
Goodyear Tire & Rubber Co., Inc. ... 27

Harshaw Chemical Co. ... 101
*Harwood & Son, Geo. S. ... 164
Hibbert & Co. Ltd., Joseph 136
Hinde & Dauch ... 164
Hubinger Co., The ... 144
Hungerford & Terry, Inc. ... 182

Ideal Industries, Inc. ... 173
Ingersoll-Rand ... 43
International Salt Co., Inc. 98

Jenkins Bros. ... 115
*Johnson Corp. ... 178

Keever Starch Co. ... 104
Kidde Mfg. Co. ... 177

Laurel Soap Mfg. Co., Inc. 181
Leighton Machine Co. ... 133
Lindly & Co., Inc. ... 166
Link-Belt Co. ... 23
*Loper Co., Ralph E. ... 184

*Main, Inc., Charles T. ... 184
*Marshall & Williams Corp. 181
M-B Products Co. ... 166
*McKiernan-Terry Corp. ... 19
Minneapolis-Honeywell ... 167
Minnesota Mining & Mfg. Co. ... 42
Moisture Register Co. ... 170
Morton Salt Co. ... 90

Nash Co., J. M. ... 164
National Aniline Div.
Allied Chem. Corp. ... 28-29
Norgren Co., C. A. ... 156

Oakite Products, Inc. ... 176

*Perkins & Son, Inc., B. F. ... 38
*Platt Bros. Ltd. ... 119
Pneumafil Corp. ... 22

Richards-Wilcox Mfg. Co. 23
Red-Ray Mfg. Co., Inc. ... 176
*Reiner Inc., Robert ... 171
Republic Steel Corp. ... 138-139
Rhoads & Sons, J. E. ... 117
Robert & Co., Associates 2nd Cover
Roberts Co. ... 17
*Rohm & Haas Co. ... 103
Ruppright Rotary Roof Cooler ... 184

*Saco-Lowell Shops ... 105, 106
Schweiter Ltd ... 36
Scott & Williams, Inc. ... 131
Sheffield Corp. ... 178
Solvay Process Div.
Allied Chem. Corp. ... 99
*Sonoco Products Co. ... 151
*Staley Mfg. Co., A. E. ... 94
Steel Heddle Mfg. Co. ... 157
Stowe-Woodward, Inc. ... 140
*Supreme Knitting Machine Co., Inc. ... 147

Tattersall & Holdsworth's.. 179
Taylor Instrument Cos. ... 175
Tennant Co., G. H. ... 152
Textile Banking Co. ... 148
*Textile Machine Works. ... 44
*Textile Shops ... 30
Theiler Corp., H. J. ... 36
Thilmany Pulp & Paper Co. 15
Toledo Scale Co. ... 158
Tompkins Bros. Co. ... 162
Ton-Tex Corp. ... 180
Torrington Co., The (Bearings) ... 146
Turbo Machine Co. ... 46

Unionmatex, Textilmaschinen-Union G.M.B.H. ... 33
Universal Winding Co. ... 108
Uster Corp. ... 31

Veeder-Root, Inc. ... 4th Cover

*West Point Fdry. & Mach. Co. ... 32
Whitin Machine Works. ... 120
Wildman-Jacquard Co. ... 12
Wood's Sons Co., T. B. ... 18
Wright Machinery Co.
Div. of Sperry Rand Co. ... 180

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES ... 186

EQUIPMENT
(Used or Surplus New)
For Sale ... 187-191

WANTED
Equipment ... 187

ADVERTISERS INDEX

Advanced Textile Company ... 187
American Air Compressor Corp. 189
Atkinson Spinnng Co., Inc. ... 191
Bialek & Co., Theodore ... 190
Blank & Co., A & M. ... 190
Chemstrand Corp., The ... 186
Dunn Corp. ... 191
Fitzgerald, James E. ... 187
Fownes Gloves ... 187
Hooper & Sons Co., William E. 188
Industrial Products of America 191
Johns-Manville Products Corp. ... 186
Machinery Sales Corp. ... 188
Mar-Day Textiles Co. ... 191
McDowell Associates Inc. ... 189
Miller Machinery Co. ... 187
Mohawk Valley Knitting Machine Co. ... 187
Moss Rose Manufacturng Co. ... 188
National Worsted Mills, Inc. ... 186
Pennsylvania Spool & Equipment Co. ... 188
Perry Equipment Corp. ... 188
Plymouth Undergarment ... 187
Princeton Knitting Mills, Inc. 188
Rabinowitz & Sons, William ... 189
Republe Textile Equipment Co. 187
Skelton, Inc., H. C. ... 191
Southern Textile Works ... 189
Stave & Kessler ... 188
Textile Auxiliaries Inc. ... 191
Wheeler Co., Frank W. ... 187

This index is published as a convenience to the reader. Every care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

for more information . . . . .

. . . on Advertisements, Equipment & Supply News, New Dyes & Chemicals, free New Literature, or TEXTILE WORLD Editorial Reprints described in this issue . . .

. . . Please circle the oppropriate numbers or write in an adequate description on the post cards below. . . . Fill in your name, job title, mill, and address and mail. No postage required.

LITERATURE, BOOKLETS AND TECHNICAL BULLETINS AVAILABLE FROM FOLLOWING ADVERTISERS IN THIS ISSUE:

A-1	ALEMITE DIV.	126
A-2	ALLEN SON'S CO.	179
A-3	ALLEN-BRADLEY CO.	3rd Cover
A-4	ALLIS-CHALMERS MFG. CO.	163
A-5	ARMSTRONG CORK CO.	24-25
A-6	AURORA PUMP	162
A-7	CLEVELAND CRANE & ENG'G. CO.	169
A-8	CONTINENTAL-DIAMOND FIBRE DIV.	172
A-9	CRANE CO.	165
A-10	CURLATOR CORP.	37
A-11	DIEHL MFG. CO.	153
A-12	DODGE & OLCOTT, INC.	97
A-13	DOW CHEMICAL CO.	102
A-14	DU PONT—FILM DEPT.	135
A-15	FAIRBANKS CO.	16
A-16	FOSTER MACH. CO.	129
A-17	GARDNER-DENVER CO.	142-143
A-18	HIBBERT & CO., LTD.	136
A-19	JOHNSON CORP.	178
A-20	MINNESOTA MINING & MFG. CO.	42
A-21	MOISTURE REGISTER CO.	170
A-22	NASH CO., INC.	164
A-23	NORGREN CO., C. A.	156
A-24	RICHARDS-WILCOX MFG. CO.	21
A-25	RUPPRIGHT ROTARY ROOF COOLER	184
A-26	SHEFFIELD CORP.	178
A-27	SOLVAY PROCESS DIV.	99
A-28	SUPREME KNTG. MACH.	147
A-29	THILMANY PULP & PAPER CO.	15
A-30	TOLEDO SCALE CO.	158
A-31	TON-TEX CORP.	180
A-32	TORRINGTON CO.	146
A-33	WILDMAN-JACQUARD CO.	12
A-34	WOOD'S SONS CO.	18

ADVERTISERS' LITERATURE: This card expires August 31, 1958

A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-8 A-9 A-10 A-11
A-12 A-13 A-14 A-15 A-16 A-17 A-18 A-19 A-20 A-21 A-22 A-23 A-24 A-25
A-26 A-27 A-28 A-29 A-30 A-31 A-32 A-33 A-34

ADDITIONAL INFORMATION ON ADVERTISEMENTS (Jot Numbers)

PAGE	SUBJECT	PAGE	SUBJECT

EQUIPMENT AND SUPPLY NEWS:
T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8
T-9 T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22
T-23 T-24 T-25 T-26 T-27 T-28 T-29 T-30 T-31 T-32 T-33 T-34 T-35 T-36

NEW LITERATURE:
F-1 F-2 F-3 F-4 F-5 F-6 F-7 F-8 F-9 F-10 F-11
F-12 F-13 F-14 F-15 F-16 F-17 F-18 F-19 F-20 F-21 F-22 F-23 F-24 F-25
F-26 F-27 F-28 F-29 F-30 F-31 F-32 F-33 F-34 F-35 F-36 F-37 F-38 F-39
F-40 F-41 F-42 F-43 F-44 F-45 F-46 F-47 F-48 F-49 F-50

DYES AND CHEMICALS: D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11 D-12 D-13

EDITORIAL REPRINTS
Numbers Listed on Back

Please Include Payment With Order

Quantity	Reprint No.	Quantity	Reprint No.	Quantity	Reprint No.

TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y., June, 1958

ADVERTISERS' LITERATURE: This card expires August 31, 1958

A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-8 A-9 A-10 A-11
A-12 A-13 A-14 A-15 A-16 A-17 A-18 A-19 A-20 A-21 A-22 A-23 A-24 A-25
A-26 A-27 A-28 A-29 A-30 A-31 A-32 A-33 A-34

ADDITIONAL INFORMATION ON ADVERTISEMENTS (Jot Numbers)

PAGE	SUBJECT	PAGE	SUBJECT

EQUIPMENT AND SUPPLY NEWS:
T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8
T-9 T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22
T-23 T-24 T-25 T-26 T-27 T-28 T-29 T-30 T-31 T-32 T-33 T-34 T-35 T-36

NEW LITERATURE:
F-1 F-2 F-3 F-4 F-5 F-6 F-7 F-8 F-9 F-10 F-11
F-12 F-13 F-14 F-15 F-16 F-17 F-18 F-19 F-20 F-21 F-22 F-23 F-24 F-25
F-26 F-27 F-28 F-29 F-30 F-31 F-32 F-33 F-34 F-35 F-36 F-37 F-38 F-39
F-40 F-41 F-42 F-43 F-44 F-45 F-46 F-47 F-48 F-49 F-50

DYES AND CHEMICALS: D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11 D-12 D-13

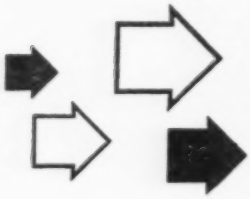
EDITORIAL REPRINTS
Numbers Listed on Back

Please Include Payment With Order

Quantity	Reprint No.	Quantity	Reprint No.	Quantity	Reprint No.

TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y., June, 1958

Textile **World**



reprints available

Reprints of the following articles run in past issues of TEXTILE WORLD are available at the price indicated. To order, write or use the Reader-Service card on p. 193, stating the numbers of the reprints desired. Enclose check or money order payable to TEXTILE WORLD.

(Please type or print)

NAME _____

TITLE or POSITION _____

COMPANY _____

ADDRESS _____

CITY & STATE _____

FIRST CLASS
PERMIT No. 64
(Sec. 34.9 P.L.&R.)
NEW YORK, N. Y.

BUSINESS REPLY CARD
No Postage Stamp Necessary if Mailed in the United States

4¢ Postage Will Be Paid By—

Textile **World**

330 W. 42nd Street

New York 36, N. Y.

McGraw-Hill Publishing Co., Inc.

(Please type or print)

NAME _____

TITLE or POSITION _____

COMPANY _____

ADDRESS _____

CITY & STATE _____

FIRST CLASS
PERMIT NO. 64
(Sec. 34.9 P.L.&R.)
NEW YORK, N. Y.

BUSINESS REPLY CARD
No Postage Stamp Necessary if Mailed in the United States

4¢ Postage Will Be Paid By—

Textile **World**

330 W. 42nd Street

New York 36, N. Y.

McGraw-Hill Publishing Co., Inc.

THE NEW RESINS FOR TREATING WHITE COTTON GOODS

1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each

What are they? How do they react? How do you apply them? An expert in the field answers these and other questions about this important development in textile chemistry. R-1

COTTON CRUSHPROOFING

1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each

An authoritative report that gives a brief background on crushproofing and explains how cotton fiber reacts to resin finishes, how crushproofing works on cotton, the types of chemicals used, and pointers on applying the finishes. R-2

A NEW WAY TO MEASURE MANAGEMENT PERFORMANCE

50¢ each, 40¢ in lots of 20 or more

Here's a tool that helps pinpoint good and bad performance, isolate the need for improvement, and show how management is progressing in one of the basic factors that help determine costs and profits. R-3

CHEMICAL FINISHING TECHNIQUES

$1 each, 85¢ in lots of 20 or more

A series of four articles that explain the chemical and physical properties of a number of finishing materials and their applications to and reactions with cellulose and various synthetics. R-4

ENGINEERED TEXTILE DESIGN

Set of 5 articles, $1.25 per set

A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basic of structure, opens the series. R-5

METALLIC-YARN WET-PROCESSING GUIDE

50¢ each, 40¢ in lots of 20 or more

Wall chart shows step-by-step guide for wet processing each of six principal types of metallic yarns. Text gives details for handling different fabrics containing metallic yarns. R-6

HERE'S A QUICK WAY TO IDENTIFY FIBERS

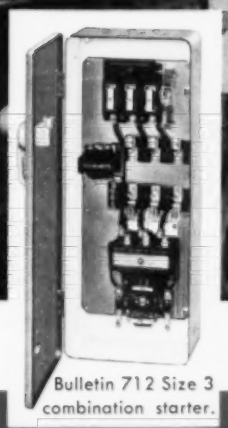
50¢ each, 40¢ in lots of 20 or more

A four-step method of fiber identification is described. A full-color chart of identification stains, a solvent chart, and fiber cross sections are included. R-7

WOVEN CLOTH DEFECTS

1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each

An illustrated series of articles that show each major cloth defect, give its causes, and explain how to eliminate it. R-8



Bulletin 712 Size 3 combination starter.

Spinning frames equipped with Allen-Bradley Bulletin 712 combination starters controlling Louis Allis textile motors.

There's a Trouble Free Allen-Bradley Starter for Every Textile Service

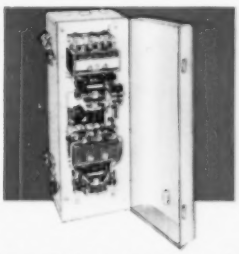
Allen-Bradley solenoid contactors—with only ONE moving part—have the simplest magnetic switching mechanism yet devised. This is your assurance of *millions* of trouble free operations. There are no bearings, pins, or pivots to corrode and stick . . . no flexible jumpers to wear and break. In addition, the double break, silver alloy contacts—standard on *all* Allen-Bradley motor controls—never need service attention of any kind. They remain in perfect operating condition until the contacts are completely worn away. Permanently accurate thermal overload relays protect motors against "burnouts."

For more information on this "complete line" of trouble free motor starters—and accessories—let us send you a copy of the latest A-B Handy Catalog. It is an abbreviated encyclopedia of *quality* motor controls. Be sure to write for your copy, today.

Allen-Bradley Co., 120 W. Greenfield Ave., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

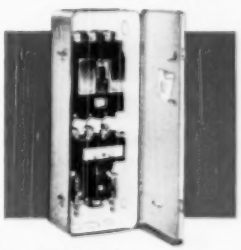
ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

Bulletin 640 manual stepless resistance starter. Acceleration is under control of operator at all times.

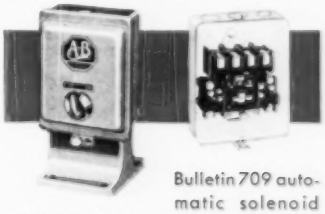


Bulletin 740 automatic resistance starter for velvet-smooth starting. Adjustable to exact motor load.

Bulletin 712, Size 1, combination across-the-line solenoid starter with visible contact disconnect switch.



Bulletin 713 combines an across-the-line solenoid starter with an I.T.E. circuit breaker—in one cabinet.



Bulletin 1209 manually operated loom starter. Enclosure protects it against dust and lint.

Bulletin 709 automatic solenoid starter for across-the-line starting. Made in 8 sizes in ratings to 300 hp, 220 v; 600 hp, 440-550 v.

These modern Veeder-Root Counters are "Big Wheels" in any mill's Cost-COUNTrol System

These Reset Lineal Measuring Counters are in world-wide use on inspection tables, in cloth rooms, on slashers . . . and on warpers, tenter frames, calenders and other equipment in weaving and knitting mills. Counter is accurately geared to one-foot-circumference wheels which may be smooth faced as shown . . . or knurled, grooved or rubber-faced. Rugged, accurate and easy to read, these counters run on any type and width of material . . . recording in feet, yards, meters, or other units. With them in your mill, you always have up-to-the-minute production and inventory figures at your command.

This is one of the many types of counters in the complete Veeder-Root textile line, available promptly from either Hartford or Greenville. What are your present counter needs? It's a smart time to order, *right now.*

VEEDER-ROOT INC.

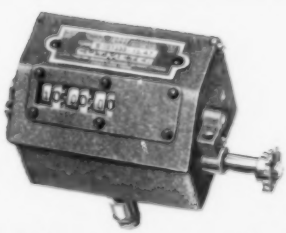
HARTFORD 2, CONN. • GREENVILLE, S. C.

Southern Headquarters in Greenville, S. C.

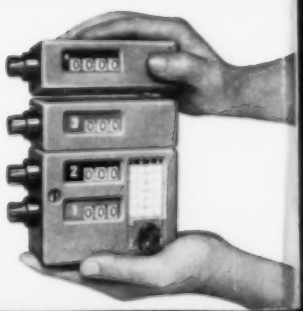
Hartford, Conn. • Greenville, S. C. • Altoona, Pa. • Chicago • New York
Los Angeles • San Francisco • Montreal • Offices and Agents in Principal Cities

Veeder-Root makes ALL TYPES of Textile Counters...

Hand-operated Vary-Tally, a multiple-unit reset counter for use in inspection, stock Countrol, etc.



Loom Cut Meters, for Countrolling cuts of cloth to predetermined lengths.



2-3-4 Shift Pick, Hank, Yardage and Knitting Machine Counters.